United States Department of the Interior
Bureau of Land Management

Environmental Assessment for the Renewal of the Grazing Lease on the Horse Gulch Allotment #04065

Little Snake Field Office
455 Emerson Street
Craig, Colorado

DOI-BLM-CO-N010-2014-0005-EA

April 2014

BLM

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CHAPTER 1 - INTRODUCTION

1.1 IDENTIFYING INFORMATION

PROJECT NAME: Renewal of the grazing lease on the Horse Gulch Allotment #04065

CASEFILE/ALLOTMENT OR PROJECT NUMBER: 0504898/ 04065

1.2 PROJECT LOCATION AND LEGAL DESCRIPTION

ALLOTMENT NAME AND NUMBER: Horse Gulch #04065

LEGAL DESCRIPTION: see Allotment Map, Attachment #1.

T5N R93W parts of Sections 1, 2
T6N R94W parts of Section 24
T6N R93W parts of Sections 1-5, 7-30, 32-36
T6N R92W parts of Sections 3-10, 15-22, 29-32
T7N R93W parts of Sections 20-23, 25-36
T7N R92W parts of Sections 30-32

ALLOTMENT SUMMARY:

26,421	acres Private
640	acres Colorado State Land Board
10,200	acres BLM
37,261	**acres Total**

COUNTY AND GENERAL LOCATION: Moffat County; East of Lay, CO south of Highway 40 to the Yampa River.

LANDSCAPE DESCRIPTION: This allotment stretches across a variety of landscapes from the Yampa River across mixed brush communities in rolling hills and juniper ridges. Elevation within the allotment ranges from 6,000 to 7,000 feet.

CLIMATE/PRECIPITATION SUMMARY: The mean annual precipitation within the allotment ranges from approximately 12-15 inches with a mean annual temperature of 42-45 degrees.

1.3 BACKGROUND

The area currently included in the Horse Gulch Allotment #04065 has been authorized for grazing to Tom and Donna Deakins since 1992. The grazing lease is proposed to be transferred to K Diamond concurrently with this renewal. Prior to the current authorization, the arrangement of the allotment boundaries was different and the majority of what is now the Horse Gulch Allotment was included in the Lower Bord Gulch Allotment #04057. Additionally, allotments #04061 (Yampa River Allotment) and #04062 were absorbed into the current Horse Gulch

Allotment boundary. These BLM lands have been authorized for livestock grazing since approximately 1966. The primary authorized use has been for cattle with some sheep use.

1.4 PURPOSE AND NEED

BLM lease #0504898, which authorizes livestock grazing on the Horse Gulch Allotment #04065, is scheduled to expire February 28, 2015. The lessee has applied for renewal of the grazing lease along with changes to the terms and conditions and implementation of range improvement projects to coordinate with private land management.

This lease is subject to renewal at the discretion of the Secretary of the Interior, who delegated the authority to BLM, for a period of up to ten years. BLM has the authority to renew the livestock grazing permits and leases consistent with the provisions of the *Taylor Grazing Act*, *Public Rangelands Improvement Act*, *Federal Land Policy and Management Act*, and Little Snake Field Office's *Record of Decision and Resource Management Plan.* This plan includes the *Colorado Public Land Health Standards* and the *Guidelines for Grazing Management.*

BLM is required to provide for public uses of public land resources under the principles of multiple use and sustained yield. Among these uses is the allocation of forage for the purposes of domestic livestock grazing. BLM allocates grazing privileges in a manner that ensures orderly and sustainable consumption of forage while ensuring that wildlife habitat, vegetative, and soil resources remain healthy and provide for a wide array of other public benefits.

The following Environmental Assessment (EA) will analyze the impacts of livestock grazing on public land managed by the BLM. The analysis will recommend terms and conditions to the lease which improve or maintain public land health. The proposed action will be assessed for meeting land health standards.

In order to graze livestock on public land, the livestock producer (permittee/lessee) must hold a grazing permit/lease. The grazing lessee has a preference right to receive the lease if grazing is to continue. The land use plan allows grazing to continue. This EA will be a site specific look to determine if grazing should continue as provided for in the land use plan and to identify the conditions under which it can be renewed.

The action is needed to respond to an application for lease renewal and range improvement construction.

1.4.1 Decision to be Made

The BLM will decide whether or not to issue a grazing lease and if issued, the terms and conditions grazing would be subject to. Additionally, a decision on whether to approve construction of the range improvements included in the renewal application will be made.

1.5 PLAN CONFORMANCE REVIEW

The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Little Snake Record of Decision and Resource Management Plan (RMP)

Date Approved: October 2011

Decision Language: The Proposed Action and all alternatives are consistent with the Little Snake Record of Decision and Resource Management Plan, Livestock Grazing Management goals to manage resources, vegetation, and watersheds to sustain a variety of uses, including livestock grazing, and to maintain the long-term health of the rangelands; provide for efficient management of livestock grazing allotments; and contribute to the stability and sustainability of the livestock industry.

Section/Page: 2.14 Livestock Grazing/RMP-41

1.6 PUBLIC PARTICIPATION

1.6.1 Scoping: NEPA regulations (40 CFR §1500-1508) require that the BLM use a scoping process to identify potential significant issues in preparation for impact analysis. The principal goals of scoping are to allow public participation to identify issues, concerns, and potential impacts that require detailed analysis.

External Scoping Summary: The action in this EA is included in the NEPA log posted on the LSFO web site: http://www.blm.gov/co/st/en/BLM_Information/nepa/lsfo.html. Additionally, the BLM Range Specialist had conversations with the lessee to discuss the renewal of the grazing lease. These comments have been incorporated into the proposed action.

Persons/Agencies Consulted:
Four Native American tribes have cultural and historical ties to lands administered by the BLM LSFO. These tribes include the Eastern Shoshone Tribe, Ute Mountain Ute Tribe, Uinta and Ouray Agency Ute Indian Tribe, and the Southern Ute Indian Tribe. Consultation for proposed general activities requiring recreational permits is consulted on annually with the tribes. Letters were sent to the tribes in the spring of 2013 describing general livestock permitting. No comments were received.

The Natural Resources Conservation Service (NRCS) and the grazing lessee have provided extensive input into the range improvement design and grazing schedule associated with the renewal application. They will be partnering with the BLM to implement any approved rangeland improvement projects.

Internal Scoping Summary: The renewal of this grazing lease was discussed at the Little Snake Field Office (LSFO) priority meeting on January 13, 2014. Multiple site visits occurred on this allotment. During the 2007 Axial Basin Assessment two sites (#28 and #29) were within this allotment. In 2010 the reaches of the Yampa River were assessed using PFC protocol. On June 6, 2013 the Sand Springs Gulch and associated springs were assessed using PFC protocol. On July 1, 2013 the Horse Gulch drainage and associated springs were also assessed using PFC protocol. Additional upland health assessments (3 sites) were completed on November 15, 2013 by a

wildlife biologist and rangeland management specialist to evaluate and discuss any concerns on the allotment. No new issues were identified.

CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The purpose of this chapter is to provide information on the proposed action and alternatives. Alternatives considered but not analyzed in detail are also discussed. The issues identified during scoping helped to formulate the proposed action.

2.2 ALTERNATIVES ANALYZED IN DETAIL

Administrative Action
Concurrent with this grazing lease renewal, transfer of the grazing lease from Tom and Donna Deakins (#0501178) to K Diamond Ranch, LLC (#0504898) is being processed.

2.2.1 Proposed Action

Renew the grazing lease #0504898 on the Horse Gulch Allotment #04065 for 10 years, expiring February 28, 2024. The lease would be renewed as follows:

From:

Allotment	Livestock		Dates			
Name & Number	Number	Kind	Begin	End	%PL	AUMs
Horse Gulch 04065	1328	Cattle	04/15	10/15	15	1205

Special Terms and Conditions:

1. Pasture use dates are approximate and may vary by one to two weeks depending on resource and climatic conditions.

2. The Ward Gulch pasture could be used to move livestock from private lands into the Horse Gulch and North Horse Gulch pastures.

3. Grazing use will follow the grazing rotation shown as an attachment to the lease.

Attached schedule:

2006/2012	Horse Gulch 4/15 – 5/15 (539 head for 2 weeks)	Arvine 5/1 – 6/15 (731 head)	Fuhr 6/16 – 7/31 185	Artesia 8/1 – 9/15 (185)	N Horse Gulch 9/16 – 10/15 (370)
			Cannon 6/16 – 7/31 (185)	Ward Gulch 8/1 – 9/15 (185)	
2007/2013	North Horse Gulch 4/15 – 5/15 (539 head for 2 weeks)	Flagstone 5/1 – 6/15 (731 head)	Artesia 6/16 – 7/31 185	Fuhr 8/1 – 9/15 (185)	Horse Gulch 9/16 – 10/15 (370)
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To:

Allotment Name & Number	Livestock Number	Kind	Dates Begin	End	%PL	AUMs
Horse Gulch #4065	997	Cattle	04/15	12/15	15	1205

Special Terms and Conditions:

1. Spring turnout would alternate pastures so that no pasture is used first in more than 2 out of 3 years.

2. The Fuhr Gulch and Horse Gulch pastures will not be used for more than 30 days during the 'hot' season (6/15 – 8/15) every other year to minimize impact to riparian resources (Sand Springs Gulch, Horse Gulch and the Yampa River).

3. No pasture would be used during the same grazing season (spring, summer, fall, winter) for more than 2 consecutive years.

4. Late fall use (10/15 to 12/15) would alternate years using Horse Gulch and Flagstone pastures in different years than Arvine and Cannon pastures.

5. Grazing use in the Fuhr Gulch and Horse Gulch pastures will not exceed 90 consecutive days in one grazing season.

The lease would also be subject to the Standard and Common Terms and Conditions as shown in Attachment #2.

Range Improvement Projects

The grazing lessee has been coordinating with the Natural Resources Conservation Service (NRCS) through their Sage Grouse Initiative Environmental Quality Incentive Program (EQIP) to plan and design range improvement projects within the Horse Gulch Allotment, on both private and public lands, to enhance the management of grazing in sage grouse habitat. These projects include a proposed cross fence in the Cannon Pasture, as well as extensive pipelines and stock tanks utilizing existing groundwater wells and a surface diversion from the Yampa River.

Attachment #3 shows the draft locations of the planned projects. The summary charts below calculate the extent of the planned projects by land ownership. These quantities and locations are approximate based on initial planning data and may be modified or relocated based on cultural analysis and engineering design. Cultural reports would be included in the project analysis within this EA as applicable. Construction on BLM would not occur until cultural surveys and engineering designs have finalized exact locations of the projects.

Disruptive activities (fence and water development construction) would not occur from March 1 through June 30 on BLM lands to prevent impacts to greater sage-grouse. Additionally, the

federally-mandated national "Call Before You Dig" 811 number should be utilized to locate and stake the center-line and limits of all underground facilities in the area of proposed excavations.

If historic or archaeological materials are encountered or uncovered during construction-related activities, the operator and/or personnel shall halt activities in the immediate vicinity and contact the authorized officer or BLM-LSFO archaeologist. Construction activities may not resume until the nature and disposition of the finding is resolved. Should the find be determined NRHP-eligible, avoidance or mitigation measures would be developed in consultation with applicable parties.

Cannon Fenceline

BLM	0.88 mi
Private	3.05 mi
Total	**3.93 mi**

Tanks

BLM	1 ea
Private	24 ea
Total	**25 ea**

Pipeline

BLM	1.9 mi
Private	23.5 mi
Colorado State Land Board	0.3 mi
Total	**25.7 mi**

Pipeline

There would be three pipeline systems installed under this alternative. The source of the first, and longest, system would be a water well located on private land near CO Highway 40 in the Cannon Pasture. The second system would provide water sources in the Horse Gulch and Fuhr Gulch pastures, and would originate on private land along the Yampa River. Water would be pumped into the pipeline from the river with a pump and diesel generator system. The third pipeline, located in the Fuhr Gulch pasture, would extend an existing BLM well project (RIPS #206306, DWR Well Permit #196486).

A short section (<0.25 mi) of pipeline along the boundary of the Horse Gulch and Fuhr Gulch pastures that crosses BLM (T6N, R93W, Section 26) would be above ground pipe due to the rocky terrain and topography. This section would connect the pump, located on private land along the river, to water sources in the Horse Gulch and Fuhr Gulch pastures. The pipe would be painted accordingly to preserve visual resources in this area. The existing two track road along Sand Springs Gulch would be used to access and maintain the pump.

A total of approximately 25.7 miles of pipeline would be installed on primarily private land with small segments on BLM. The pipeline would be installed with a dozer equipped with a ripper. 1 ½ - 2" poly pipe would be laid into a narrow trench 18" deep and then covered. NRCS is cooperating with the lessee for the system construction design. General specifications for the pipeline include:

- Air vacs installed at pipeline summits
- Drains encased where daylighted to prevent damage

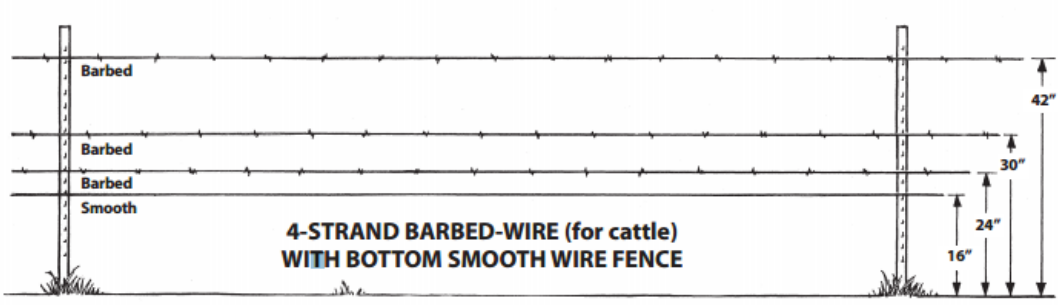
- Buried drains would have vinyl screens or gravel
- Ball valves (2”) would be installed at all Tee’s

Tanks

Stock tanks would be installed to provide permanent water sources and facilitate grazing rotation. Fiberglass tanks (750 gallons) would be used. The tanks would operate on a float system with no overflow ponds. Tanks would be skirted by a coarse sand or gravel apron 6” thick with a 5’ radius. Bird escape ramps would be installed.

Cannon Fenceline

This fence would intersect the Cannon pasture providing two new pastures to include in the grazing rotation system. Construction of the fence would be a four-wire fence with the top three barbed and the bottom wire smooth. Wire spacing would be at 16”, 24”, 30”, and 42”. A combination of wood and t-posts would be used with gates and braces installed as needed across the topography. The timeframe for construction of this fenceline would extend into the later years of this grazing lease subsequent to implementation of the water developments.



Maintenance of range improvement projects would be the responsibility of the lessee and should conform to minimum requirements outlined in BLM Handbook H-1741-2 as well as meet any applicable State requirements for groundwater extraction wells. BLM Cooperative Agreements would accompany all projects on BLM land.

Cultural Resources

Cultural resources survey for a select portion of the subject allotment should occur within 10 years of permit issuance with efforts focused on identified areas of livestock concentration (e.g., springs and/or water developments, gates, chutes, etc.). Any cultural resources identified as NRHP-eligible or “needs data” also should be assessed for potential livestock impacts. Any proposed range improvement projects are subject to NHPA review and compliance, as appropriate for the scale and scope of each undertaking. Continued livestock use of the area is appropriate, provided that any identified impacts to NRHP-eligible resources are mitigated. Should the BLM-LSFO determine that livestock grazing and/or improvement projects pose an adverse effect on historic properties, mitigation will be developed in coordination with the SHPO and consulting parties, as appropriate.

2.2.2 No Action Alternative

Renew the lease with the existing mandatory terms and conditions. The Standard and Common Terms and Conditions would continue to apply. Proposed range improvements would not be

approved for construction on BLM.

The lease would be renewed as follows:

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2.2.3 No Grazing Alternative

The application for renewal of the grazing authorization on the Horse Gulch Allotment #04065 would be denied. As a result, livestock grazing would not be authorized. The BLM would initiate a process in accordance with the 43 CFR 4110.3 regulations to remove authorized grazing on this allotment. No new range improvement projects would be approved for construction.

CHAPTER 3 – AFFECTED ENVIRONMENT AND EFFECTS

3.1 INTRODUCTION

Affected Resources:
The CEQ Regulations state that NEPA documents "must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail" (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an environmental assessment (EA). Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Table 1 lists the resources considered and the determination as to whether they require additional analysis.

Table 1. Resources and Determination of Need for Further Analysis

Determination[1]	Resource	Resource Issue/Rationale for Determination
Physical Resources		
NI	Air Quality	Activities associated with grazing that may affect air quality, namely dust and exhaust from ranch operation vehicles as well as dust from livestock hoof action, fall below EPA emission standards for the six criteria pollutants of concern (sulfur dioxide, nitrogen oxide, ground-level ozone, carbon monoxide, particulate matter [both PM2.5 and PM10], and lead). Furthermore, ranch operation and livestock activities are not a significant source of these pollutant emissions that do occur in Moffat County. Impacts to air quality caused by either alternative are therefore considered negligible.
NI	Floodplains	There are FEMA-identified 100-year floodplains within the Horse Gulch allotment that are subject to rare flooding. None of the alternatives analyzed include development within identified floodplains. No threat to human safety, life, welfare and property would result from implementing any of the alternatives.
PI	Hydrology, Ground	See Chapter 3.2.3 for detailed analysis.
PI	Hydrology, Surface	See Chapter 3.2.3 for detailed analysis.
NI	Minerals, Fluid	Oil and gas activities in the area are required, by permit, to meet interim and final reclamation standards. The oil and gas operators and grazing lessees may need to coordinate efforts to deter grazing and surface disturbance of these localized sites.
NI	Minerals, Solid	There are no solid mineral authorizations in the allotment.
PI	Soils	See Chapter 3.2.1 for detailed analysis.
PI	Water Quality, Ground	See Chapter 3.2.3 for detailed analysis.
PI	Water Quality, Surface	See Chapter 3.2.2 for detailed analysis.

Biological Resources		
PI	Invasive, Non-native Species	See Chapter 3.3.1 for detailed analysis.
PI	Migratory Birds	See Chapter 3.3.2 for detailed analysis.
PI	Special Status Animal Species	See Chapter 3.3.3 for detailed analysis.
NP	Special Status Plant Species	There are no federally listed threatened, endangered, or BLM sensitive plant species populations identified on these allotments. Potentially suitable habitat could exist for a threatened plant species, Ute ladies'-tresses orchid *(Spiranthes diluvialis)* along the Yampa River. This species was analyzed in the Biological Assessment for the Horse Gulch Grazing Lease Renewal prepared March 2014. A determination of "May Affect, but is not likely to Adversely Affect" was reached. The U.S. Fish and Wildlife Service concurred with this determination on March 10, 2014.
PI	Upland Vegetation	See Chapter 3.3.4 for detailed analysis.
PI	Wetlands and Riparian Zones	See Chapter 3.3.7 for detailed analysis.
PI	Wildlife, Aquatic	See Chapter 3.3.5 for detailed analysis.
PI	Wildlife, Terrestrial	See Chapter 3.3.6 for detailed analysis.
NP	Wild Horses	There are no HMAs within or near the allotment.
Heritage Resources and the Human Environment		
PI	Cultural Resources	See Chapter 3.4.1 for detailed analysis.
NI	Environmental Justice	The proposed action would not impact populations and would not have disproportionate or adverse human health or environmental effect on minority or low-income populations.
NP	Hazardous or Solid Wastes	There are no hazardous waste concerns in the allotment.
NI	Lands with Wilderness Characteristics	Subject to WO-IM 2011-154 and in accordance with BLM policy, some of the proposed project areas fall within areas greater than 5000 acres which may be suitable as lands with wilderness characteristics. The proposed action may impact but not impair wilderness characteristics; however, grazing activities are appropriate and consistent with applicable requirements of law and other resource management considerations, and is approved by the field manager.
NI	Native American Religious Concerns	There are no adverse impacts to any culturally significant items, sites, or landscapes. If new information is provided by consulting tribes, additional or edited terms and conditions may be required to protect or mitigate resource values.
NI	Paleontological Resources	The proposed action would not impact paleontological resources.
NI	Social and Economic Conditions	There would not be any change to local social or economic conditions.
NI	Visual Resources	A small section of the Sand Springs Gulch access road for maintenance would fall within .25 mile of the river corridor. The river corridor is a VRM Class II where the objective is to retain the

		existing character of the landscape and level of change should be low and not attract the attention of the casual observer. Outside the .25 corridor is VRM Class III. The area has a very high scenic quality and sensitivity rating; however, there would be no impact on visuals.
Resource Uses		
NI	Access and Transportation	The EA does not analyze a change in current access and transportation.
NI	Fire Management	All alternatives would have no impact to fire management.
NP	Forest Management	There are no forestry resources within the allotment.
PI	Livestock Operations	See Chapter 3.5.1 for detailed analysis.
NI	Prime and Unique Farmlands	There are soil types designated as "prime farmland if irrigated" and "farmland of statewide importance" within the Horse Gulch Allotment. Generally, farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. None of these soils are or would become irrigated or otherwise manipulated so as to create conditions favorable to create prime farmland on public lands within the allotment.
NI	Realty Authorizations, Land Tenure	There are several realty authorizations (power lines, telephone line and Federal Aid Highway) within the project area; however they would not be affected by the proposed action or alternatives. There are no land tenure adjustments currently within the allotment.
PI	Recreation	See Chapter 3.5.2 for detailed analysis.
Special Designations		
NP	Areas of Critical Environmental Concern	There are no ACECs within the allotment.
NI	Wild and Scenic Rivers	The National Wild and Scenic Rivers (NWSR) Act (PL 90-542 and amendments) Section 5(d) requires federal agencies to consider potential wild, scenic, and recreational river areas in all planning for the use and development of water and related land resources. Section 10(a) describes the basic management requirement of protecting and enhancing the values that were the reasons for originally including the river in the NWSR System. Yampa River Segment 2 (Milk Creek to Duffy Tunnel – scenic) are suitable for inclusion in the NWSR System and cannot be modified, to the extent BLM is authorized under law to control stream impoundments, diversions, or other development on public lands only.
NP	Wilderness Study Areas	There are no WSAs within the allotment.

[1] NP = Not present in the area impacted by the Proposed Action or Alternatives. NI = Present, but not affected to a degree that detailed analysis is required. PI = Present with potential for impact analyzed in detail in the EA.

3.2 PHYSICAL RESOURCES

3.2.1 Soils

Affected Environment: The table below (Table 1) describes the major soil groups included within the Horse Gulch Allotment. Based on several upland site assessments completed in late 2013, upland soils are stable (little to no sign of movement) with a good perennial grass and sagebrush canopy to help protect from accelerated erosion. Some non-native annual grass cover is present (*Bromus tectorum*), but is present at an acceptable level, which is an improvement over the previous upland assessment completed in 2007. Biological soil crusts are present where appropriate and intact (see Section 4 Public Land Health Standards). The upland soils standard is currently being met in this allotment.

There is, however, concern for soil conditions in and around the few riparian features in the southern portion of the allotment. A lack of reliable water sources, other than springs and seeps, during the hot season (June-August), has resulted in livestock concentration around these features. Soils in these areas are heavily compacted and pedestalled. Hoof prints and trailing have altered surface flow patterns and vegetation is either trampled or removed altogether, increasing the potential for localized erosion.

Table 1. Soil Summary for the Horse Gulch Allotment (#04065)

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 77 Forelle loam, 3 to 12% slopes 5,919 acres	Elevation: 6,200 to 7,200 feet Mean annual precipitation: 11 to 13” Ecological Site: Rolling Loam	These bench soils are well drained with moderate permeability and medium runoff potential. Available water capacity is high and the soil profile is typically 60” deep, composed mostly of loam and clay loam.
MU 197 Torriorthents-Rock outcrop, sandstone complex , 25 to 75% slopes 4,292 acres	*Elevation:* 6,000 - 11,280 feet *Mean annual precipitation:* 9-16” *Ecological Site:* not given	These backslope soils are well drained with moderate permeability and very high runoff potential. Available water capacity is very low and the soil profile is typically 0-18 inches deep, composed mostly of channery sandy loam and channery clay loam down to bedrock.
MU 162 Rock River sandy loam, 3 to 12% slopes 3,678 acres	Elevation: 6,200 to 7,200 feet Mean annual precipitation: 11 to 13” Ecological Site: Rolling Loam	These alluvial fan and hillslope soils are well drained with moderate permeability and medium runoff potential. Available water capacity is moderate and the soil profile is typically up to 60 inches deep, composed mostly of sandy loam and sandy clay loams.
MU 112 Kemmerer-Moyerson complex, 20 to 40% slopes 3,232 acres	Elevation: 6,000 to 7,000 feet Mean annual precipitation: 11 to 13” Ecological Site: Clayey Slopes	These hillslope soils are well drained with very slow to moderate permeability and medium to very high runoff potential. Available water capacity varies widely and the soil profile is typically up to 26 inches deep, comprised mostly of clay and

		silty clay.
MU 47 Coyet-Crestman, moist complex, 20 to 50% slopes 2,941 acres	*Elevation:* 6,000' – 7,200' *Mean annual precipitation:* 13-14" *Ecological Site:* Sandy Foothills and Loamy Breaks	These hillslope soils are excessively drained with moderately rapid permeability and medium to very high runoff potential. Available water capacity is low to very low and the soil profile is typically 18 to 52" inches deep, composed mostly of loamy sand, sand, and gravelly loamy sand.

Data taken from *Soil Survey of Moffat County Area, Colorado (2004).*

Environmental Consequences, Proposed Action: Range improvements and changes in grazing management proposed under this alternative would not only maintain, but improve overall soil health and stability. Implementing a more flexible deferred rotational system, rather than a set rotation, and adding cross fencing to provide additional rotational options would encourage native perennial herbaceous growth and establishment that would, in turn, improve soil stability by protecting the soil surface from wind and water erosion and producing litter to facilitate water permeability and aid in soil moisture retention. Upland water developments throughout the allotment would better distribute livestock use and minimize concentration around naturally occurring surface water sources that has led to serious vegetation and soil damage around these riparian features (see Section 3.3.6 Wetlands and Riparian discussion).

Environmental Consequences, No Action Alternative: While upland soil standards are currently being met (and are likely to continue to be met under this alternative), current grazing management does not provide for improvements (cross fencing, upland water developments) that are designed to prevent further degradation of riparian soils and vegetation within the allotment. A continuation of practices under this alternative would allow for a continued decline (or at least prevent improvement) in the health and vigor of native, perennial riparian vegetation that is important for maintaining soil health and stability, which may preclude the land health standards for soils from being met in the future.

Environmental Consequences, No Grazing Alternative: Removal of livestock from public lands would lead to decreased hoof compaction of soil surfaces, especially in riparian areas where livestock tend to congregate and particularly during the summer and in steep areas. Over time the lack of compaction, combined with the annual freeze-thaw cycle, would lead to a decrease in soil bulk density and improved soil moisture conditions, which facilitates vegetation germination and root development. Removing livestock would also result in an increase of both plant litter and live vegetative ground cover that would provide more protection from wind and water erosion. Any livestock trails and the resulting erosion would heal over time.

If grazing were to continue on adjacent private or other non-federal lands in the allotment, fences would have to be built by the landowner(s) to prevent trespass onto federally-managed lands. Given the natural tendency of cattle to congregate and trail along fence lines, it is likely that paths and forage depletion would occur along the fences. The resulting decrease in canopy cover would increase the impact of raindrops on the soil surface, while the expected increase in compaction would increase runoff from both rain and snowmelt. These factors would combine to increase the likelihood of both wind and water erosion in the areas adjacent to fences. This

would result in blowouts and gullies which could indirectly impact federal lands through deposition or by the eroded area actually spreading onto federal lands.

Environmental Consequences, Cumulative Impacts: Past, present, and reasonably foreseeable actions that affect soils in the Sandhills area of the Yampa River Basin primarily include ranching, fluid mineral exploration and development, and the infrastructural development necessary to support these activities. The majority of livestock grazing impacts occur around existing water sources such as streams, springs, troughs, stock ponds, areas providing cover or shade, and along fence lines where livestock tend to trail. The soils within and closely surrounding these areas receive heightened use and may exhibit signs of soil compaction, erosion, and reduced productivity.

Oil and gas activities occur in the area in a limited amount. However, there has been a recent renewal of interest in the area and development may be on the rise. Most of this activity has occurred to date on private lands. Development of subsurface minerals includes the removal of top soil and exposure of subsurface soils. These areas of decreased vegetation and litter cover are generally more susceptible to soil erosion, increased runoff, and infestation by invasive, non-native plant species. Some restoration work has occurred at the pad sites to limit the amount of soil erosion, but bare soil still remains in places. Development on public lands always includes mitigation measures to reduce or eliminate these impacts; however, development on private land may not be as closely monitored or mitigated.

The primary impact to soils from infrastructural development has been disturbance, spread of invasive species, runoff and off-site sedimentation associated with road construction, maintenance, and use. The nature and extent of the impact varies with the type of road, the extent of use, and the level of maintenance. For example, primitive 4WD roads, and ATV trails are naturally surfaced and rarely used or maintained, making them susceptible to potentially severe gullying and rilling, especially on grades. Naturally surfaced and gravel-surfaced roads also occur in the valley. Although the extent of use and level of maintenance varies, these roads typically are used more often and receive a higher level of maintenance than primitive roads and trails. Because these types of roads are often used for fluid mineral activities, most have engineered designs and appropriately spaced culverts to drain runoff. As a consequence, these roads are far less likely to erode, though runoff and off-site sedimentation still occur.

3.2.2 Water Quality, Surface

Affected Environment: There are no perennial surface waters within the Horse Gulch allotment that would be subject to the Clean Water Act. However, the allotment is bordered on the south by the Yampa River. Any surface runoff from this allotment flows primarily into the Yampa River or into ephemeral tributaries of the Yampa River. This section of the Yampa River, from a point below the confluence with Elkhead Creek to the confluence with the Green River, must support the following uses:

- Aquatic Life Warm 1 = Waters that currently are capable of sustaining a wide variety of warm water biota, including sensitive species or could sustain such biota but for correctable water quality conditions.
- Recreation Class E = Waters used for primary contact (i.e. swimming, rafting, kayaking, tubing) recreation since November 1975.

- Water Supply (domestic) = Waters are suitable or intended to become suitable for potable water supplies. After receiving standard treatment these waters will meet Colorado drinking water regulations.
- Agriculture = Waters that are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous as drinking water for livestock.

As of 2013, the Yampa River in this area is on the Colorado Department of Public Health and Environment's (CDPHE) Section 303(d) list of Impaired Waters because of a high priority total recoverable iron impairment (CDPHE 2013). This segment is also on CDPHE's Monitoring and Evaluation List for a suspected water quality problem regarding sediment load (CDPHE 2013).

There are at least 18 springs and seeps, comprising approximately 2 acres total of habitat for riparian vegetation, identified within the allotment, most of which occur in Horse Gulch and Sand Springs Gulch, ephemeral tributaries to the Yampa River. Currently, these springs provide the main source of reliable surface water in this portion of the allotment and as such, are very heavily used by livestock, especially in the hottest part of the summer.

Perennial surface waters influenced by the allotment are not currently supporting classified uses, however, permitting livestock grazing activities would have no relatable impact to the identified total recoverable iron impairment. Direct livestock access from the allotment to the Yampa River could potentially cause a slight increase in sedimentation, however livestock access to the river is largely prevented by allotment boundary fencing and steep terrain. Any access livestock have to the river from private lands is outside the permitted actions analyzed here.

Reference: Colorado Department of Public Health and Environment Water Quality Control Commission. 2013. Regulations #33, 37, and 93. http://www.colorado.gov/cs/Satellite/CDPHE-WQ/CBON/1251596876811

Environmental Consequences, Proposed Action: Grazing activities could result in soil compaction and displacement that increase the likelihood of erosional processes, especially on steep slopes and areas devoid of vegetation. Soil detachment and sediment transport are likely to occur during runoff events associated with spring snowmelt and short-duration high intensity thunderstorms. In addition, the continued presence of livestock in the area increases the amount of feces present in close proximity to nearby drainages. The introduction of livestock feces to waterbodies often leads to water quality degradation by increasing fecal coliform bacteria levels and can lead to algal blooms which increase water temperatures.

Permitting livestock grazing in these allotments as proposed is consistent with land uses throughout the watershed and would not result in measurable changes to water quality of the Yampa River. Management under this alternative would most benefit water quality at springs and seep sites that are currently so heavily used by livestock. Proposed changes to the grazing schedule are designed to relieve pressure from naturally-occurring surface seasonal waters through the development of additional upland sources. These changes also reduce (halve) the amount of time livestock spend in riparian pastures during the hot season, when livestock are most drawn to water. These changes would, over time, improve the quality and quantity of riparian vegetation that would reduce the amount of bare ground, filter sediments, minimize fecal bacteria presence, and provide shade to springs and seeps to decrease surface water temperatures.

Environmental Consequences, No Action Alternative: Impacts to water quality would be the same as is described under the proposed action, however the expected improvement to seep and spring water quality is not likely to occur since livestock would continue to depend annually on these features for surface water during the hottest part of the season.

Environmental Consequences, No Grazing Alternative: The direct and indirect impacts to water quality caused by livestock use, such as deposition and concentration of waste directly into springs/seeps or trampling, trailing, grazing of wetland vegetation that may lead to increased sedimentation, would be eliminated. This alternative has the potential to benefit overall water quality both within and downstream of Horse Gulch.

Environmental Consequences, Cumulative Impacts: Past, present, and reasonably foreseeable actions that affect surface water quality in the Sandhills area of the Yampa River Basin primarily include ranching, some fluid mineral exploration and development, and the infrastructural development necessary to support these two activities.

The Sandhills portion of the Yampa River watershed drains primarily to the Yampa River, just west of the town of Maybell, CO. Pollutants that are delivered downstream typically include nitrogen, pathogens, and sediment. The Yampa River through this region is presently listed as impaired by the State of Colorado for total recoverable iron and is on the State's Monitoring and Evaluation list for a suspected sediment problem. Grazing occurs at some level in nearly every portion of the watershed. During snow melt driven high-flow events that occur in the late spring sediment is delivered to the Yampa River from its numerous perennial and ephemeral tributaries. This sediment flush is a natural occurrence; the amount of sediment occurring above background levels as a result of grazing across the watershed is not known.

The effect to water quality due to the limited amount of fluid mineral and infrastructural development is primarily sedimentation, a result of the construction and maintenance of roads and pads adjacent to riparian areas in the watershed. The portion of sediment that is delivered to the Yampa River as a direct consequence of these improvements is not known, but is likely to occur during the spring high flow period coincident with the natural sediment discharge peak as well as summer storm events.

Treatment of invasive species within riparian corridors for any of the above land uses would have likely introduced chemicals into streams, but in small amounts relative to the watershed, and dilution and dispersal in these effects may not be detectable in water that is discharged to the Yampa River.

Reference: Colorado Department of Public Health and Environment Water Quality Control Commission. 2013. Regulations #33, 37, and 93. http://www.colorado.gov/cs/Satellite/CDPHE-WQ/CBON/1251596876811

3.2.3 Hydrology and Water Quality, Ground

Affected Environment: The Horse Gulch Allotment is situated on the southern margins of the Sand Wash Basin (sedimentary rock aquifer) of northwestern Colorado. Hydrogeologic units of the Sand Wash Basin include sedimentary rocks of Paleozoic, Mesozoic, and Cenozoic age. Tertiary-age geologic formations line at or near the surface throughout most of the basin, and as such, the Wasatch-Fort Union aquifer is the uppermost regional aquifer in the basin (Topper

et.al., 2003). However, surface geology throughout the Horse Gulch Allotment is comprised of older Cretaceous rocks, specifically sandstone and shales of the Mesaverde group (Mesaverde aquifer). A generalized cross-section of the basin is presented as Figure 1 and details on the hydrogeologic units are presented in Table 2.

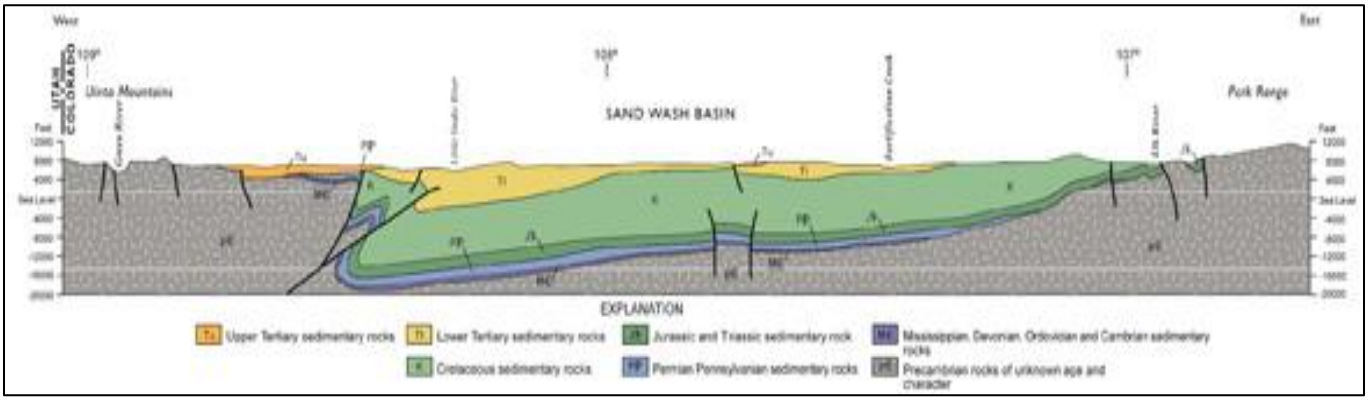

Figure 1 Generalized geologic cross section through the Sand Wash Basin (in Topper et.al., 2003, from Tweto, 1983).

Because of the extensive outcrop area of Cretaceous rocks in the Sand Wash Basin (Figure 1), the Mesaverde and Dakota are likely to be the principal aquifers along the southern, southeastern, and eastern margins of the basin which coincide with the location of the Horse Gulch Allotment. In these areas, the Cretaceous-age target aquifers exist at depths less than 2,000 feet and their outcrop areas are exposed to recharge from precipitation, resulting in good water quality (Topper et.al., 2003). Generally, groundwater discharging as springs or seeps at the surface is a rare occurrence, but is likely the result of percolation of rainfall/snowmelt runoff hitting localized lenses of less permeable geologic strata and daylighting at locations these strata surface (usually in areas of significant slope breaks or in drainage features).

Table 2: Hydrogeologic units of the Sand Wash Basin

Era	System	Series	Stratigraphic Unit	Unit Thickness (feet)	Physical Description	Hydro-geologic Unit	Saturated Thickness (feet)	Hydrologic Characteristics
Cenozoic	Tertiary	Miocene	Browns Park Formation			Local aquifer		
		Oligocene	Ash-flow tuff Bishop Conglomerate			Local aquifers		
		Eocene	Green River Formation	1,000 to >3,000	*Laney Member* (Green River Fm) Shale and marlstone *Cathedral Bluffs Tongue* (Wasatch Fm) shale and fine-grained sandstone *Tipton Tongue* (Green River Fm) shale and marlstone	Confining unit		Hydraulic conductivity from drill-stem tests range from 0.01 to 0.49 ft/day
			Wasatch Formation (main body)	<1,000 to >4,000	Siltstone and sandy shale; thick arkosic sandstone in eastern basin	Wasatch-Fort Union aquifer: Wasatch zone		Hydraulic conductivity: from drill-stem tests range from 0.004 to 1.57 ft/day; median 0.05 ft/day From aquifer and specific capacity tests range from 0.03 to 9.1 ft/day
		Paleocene	Fort Union Formation	<1,000 to 3,000	Interbedded sandstone, variable thickness with siltstone, shale, lignite and coal; basal sandstone and conglomerate	Wasatch-Fort Union aquifer: Fort Union zone		Hydraulic conductivity: from drill-stem tests range from 0.001 to 0.22 ft/day; median 0.02 ft/day; from aquifer and specific capacity tests range from 0.02 to 938 ft/day
Mesozoic	Cretaceous	Upper Cretaceous	Lance Formation Lewis Shale			Leaky confining unit		
			Mesaverde Group	3,000	Sandstone with interbedded shale and coal	Mesaverde aquifer	<1,000 to >2,000	Porosity <10%,estimated hydraulic conductivity near Park Range up to 1 ft/day; where deeply buried <0.01 ft/day; estimated transmissivity <50–100ft²/day
		Lower Cretaceous	Mancos Shale	Average 5,000	Predominately shale, mudstone, and claystone; with *Frontier Sandstone member*	Mancos confining unit	100–200	Sandstones are local aquifers
			Dakota Sandstone	200	Sandstone, conglomerate, and mudstone	Dakota aquifer	100–200	Porosity <10% Locally confining unit

Table data from Topper et.al., 2003

The Colorado Water Quality Control Commission promulgates regulation No. 41 entitled "The Basic Standards for Ground Water" under the authority to classify waters of the state and to establish water quality standards to support those classifications. The regulation establishes a system for classifying ground water and describing those classifications by use and quality. The standards, when applied to specific classes of ground water, become the baseline by which one can establish if water quality has been degraded or water use has been impaired or precluded. Regulation 41 outlines both numeric and narrative standards for water quality associated with different classifications. Water developments for livestock operations fall under the "Agricultural Uses" definition which includes existing or potential future uses of ground water for the cultivation of soil, the production of crops, and/or the raising of livestock (CDPHE, 2013).

Published water quality data for the Sand Wash Basin are minimal. In general, the TDS (Total Dissolved Solids) concentration of ground water in the Mesozoic rocks is less than 1,000 mg/L, along the southeastern and eastern part of the basin where there is good potential for recharge from precipitation. As ground water in these older rocks moves toward the center of the basin (to the north/northeast) it becomes briny, with TDS greater than 35,000 mg/L (Topper et.al., 2003).

Water for stock use associated with the proposed action would primarily be developed from groundwater sources on private lands (wells tapping the Mesaverde aquifer). However, one groundwater well on BLM administered lands is identified for use in the Fuhr Gulch Pasture (Horse Gulch Well #1). Well log data from BLM's Horse Gulch #1 well located in SE1/4, SE1/4 Section 25, T6N, R93W 6th P.M. show primarily sandstone units interbedded with shale and coal which is consistent with geologic characteristics of the Mesaverde aquifer (see Table 2). This BLM well was completed 7/21/1996 to a total depth of 600 feet below ground surface and authorized under DWR permit #196486 for livestock uses. The well construction completion report filed with DWR indicates a static water level of 310 feet below ground surface with the perforated casing depth of 569-579 feet below ground surface and a claimed pumping rate of 15 gallons per minute. Horse Gulch Well #1 has been fitted with a 2-HP submersible pump designed to lift 10-gpm (at 3400 RMPs) and powered by a portable electric generator. BLM maintenance reports from 2007 indicate the well was producing 12 gpm at that time. No groundwater quality data exists from Horse Gulch Well #1. However, given the geographic and geologic setting described above, water quality is anticipated to be sufficient to support identified use types (livestock watering).

Environmental Consequences, Proposed Action: Under the proposed action, BLM would renew the grazing lease for the Horse Gulch Allotment for a period of 10-years (with terms/special terms and conditions), and authorize construction of range improvement projects on public lands within the allotment boundaries. Proper grazing management combined with efficient water use and strategically located livestock watering facilities would support BLM, NRCS, and permittee efforts to minimize livestock impacts in sensitive areas. Reduced grazing impacts to sensitive areas (primarily seeps/springs and drainages) would improve surface runoff time in contact with surface geology promoting more effective recharge to underlying aquifers although quantification of these benefits would be difficult to decipher from natural variations.

Consumptive use of groundwater within the allotment boundary may increase from current conditions with implementation of the proposed action as additional water tanks would be installed on the landscape. Specifically, two additional 750 gallon tanks would be supported by groundwater from the BLM well to provide water to livestock in the Fuhr Gulch pasture during the proposed season of use. However, because, all of the groundwater sources proposed for use (including the BLM well) are currently being utilized, to some extent, it is not anticipated that the increased volume of use during the authorized grazing seasons would result in any quantifiable impact to aquifer properties. Additionally, because construction of water developments on public lands has been done in accordance with Colorado Department of Water Resources permitting regulations and minimum construction requirements for groundwater extraction wells, impacts to water quality associated with development of groundwater resources is not anticipated.

Environmental Consequences, No Action Alternative: Direct impacts to groundwater resources from implementation of the No Action Alternative would not change from current conditions given the geographic and geologic setting in which groundwater extraction wells are situated. All of the groundwater wells identified in the proposed action are existing wells which are currently being utilized to support livestock grazing operations to some extent. These wells are all completed in the Mesaverde Group aquifer at depths likely exceeding 500 feet below ground

surface (using BLMs Horse Gulch Well #1 for general reference). As outlined in the affected environment, groundwater discharging to the surface as springs and/or seeps is likely the result of percolating rainfall/snowmelt runoff hitting localized lenses of less permeable geologic strata and daylighting at locations these strata surface. Therefore, groundwater wells developing water below these less permeable lenses would not contribute to dewatering springs or seeps. Because construction of water developments on public lands has been done in accordance with Colorado Department of Water Resources permitting regulations and minimum construction requirements for groundwater extraction wells, impacts to water quality associated with development of groundwater resources is not anticipated.

Indirect impacts associated with the No Action Alternative would include reduced groundwater recharge from surface drainage courses if these areas continue to be heavily grazed by livestock. This may be assumed because in arid and semi-arid regions there is mounting evidence that recharge is likely to occur in only small portions of a basin, where flow is concentrated, such as depressions and ephemeral stream channels (Walvoord et al. 2003). Studies indicate that recharge along ephemeral channels can be large and play an important role in groundwater/surface water dynamics in arid and semi-arid basins (Goodrich et al. 1997). By removing vegetation in key areas largely responsible for recharging deeper groundwater, surface run-off can be elevated limiting run-off time in contact with the formation reducing recharge potential to underlying aquifers. However, quantification of these recharge losses would be difficult and may be tough to distinguish from natural variations in climate, evapotranspiration, and wetted channel evaporation.

Environmental Consequences, No Grazing Alternative: Under the No Grazing Alternative grazing on public lands within the Horse Gulch Allotment would not be permitted. Therefore, BLM could not put Horse Gulch Well #1 to beneficial use and may lose the water development to deterioration and non-use. Likewise, consumptive use of groundwater resources developed from Horse Gulch Well #1 would stop until other beneficial uses are identified, authorization for use of water from the well is granted for use on private lands (ROW agreement), or authorized grazing on public land resumes.

Grazing would likely continue on adjacent private lands as would the utilization of existing private groundwater sources. Development of range improvement projects to move water throughout private lands would be done at the discretion of the private land owners. However, impacts to the quality or quantity of groundwater resources would be tough to decipher from the No Action Alternative other than less water would be developed from Horse Gulch Well #1.

Environmental Consequences, Cumulative Impacts: Proper grazing management combined with efficient water use and strategically located livestock watering facilities would support BLM, NRCS, and permittee efforts to minimize livestock impacts in sensitive areas. Reduced grazing impacts to sensitive areas (primarily seeps/springs and drainages) may improve surface runoff time in contact with surface geology promoting more effective recharge to underlying aquifers although quantification of these benefits would be difficult to decipher from natural variations.

References:

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3.3 BIOLOGICAL RESOURCES

3.3.1 Invasive/Non-Native Species

Affected Environment: Invasive plant species and noxious weeds occur within the allotment. Downy brome, Hoary cress (whitetop), Canada thistle, musk thistle, scotch thistle, perennial pepperweed, halogeton and knapweeds occur within or near this area. Other species of noxious weeds could be introduced by vehicle traffic, livestock, wildlife and other means of dispersal. Principles of Integrated Pest Management (IPM) are employed to control noxious weeds on BLM lands in the Little Snake Field Office. A primary invasive weed concern is the presence of whitetop and perennial pepperweed within the riparian drainages. Additionally, some areas of the allotment have an abundance of cheatgrass as noted in the 2007 Land Health Assessments.

Environmental Consequences, Proposed Action and No Action: Access to public lands for dispersed recreation, hunting, livestock grazing management, livestock and wildlife movement, as well as wind and water, can cause weeds to spread. Surface disturbance from livestock concentration and human activities associated with grazing operations can increase weed presence. The largest concern in the allotment would be for biennial and perennial noxious weed infestations to establish and not be detected. Once an infestation is detected, it could be targeted for control with various IPM techniques. Land practices and land uses by the livestock operator and their weed control efforts and awareness would largely determine the identification of potential weed infestations within the allotment.

Environmental Consequences, No Grazing Alternative: This alternative removes the spread and introduction of weeds by livestock. Additional sources of seed dispersal including existing infestations, wildlife, water wind, etc. would still be present throughout the allotment. However, under this alternative there would be no presence by the grazing lessee to assist with detection of infestations and spread on BLM parcels.

Environmental Consequences, Cumulative Impacts: Under the proposed action and No Action Alternatives, weed infestation and dispersal through livestock transport may increase on a potential of ~10,200 acres of BLM land. This increased risk would be an acceptable level as managed under the grazing permit and weed management projects.

3.3.2 Migratory Birds

Affected Environment: Migratory bird habitats on the allotment are comprised primarily of sagebrush stands with small areas of pinyon-juniper (PJ) woodlands. A variety of migratory

birds may utilize these vegetation communities during the nesting period (May through July) or during spring and fall migrations. The allotment provides potential habitat for several species on the USFWS's Birds of Conservation Concern (BCC) List. Those species associated with the Southern Rockies/Colorado Plateau and Northern Rockies regions are presented by habitat affiliation below.

BCC species associated with shrubland habitats in the LSFO include Brewer's sparrow, sage sparrow, sage thrasher and loggerhead shrike. All four birds are summer residents in Colorado and all but the loggerhead shrike nest in sagebrush stands. Nests can be constructed in sagebrush or other shrubs, with some species nesting under shrubs. Shrikes nest in trees in shrubland habitats. All species would likely be nesting in the general area from mid-May through mid-July. Areas where small trees are encroaching into sagebrush may provide potential habitat for shrikes.

BCC species associated with PJ woodlands include pinyon jay and juniper titmouse. Pinyon jays are loosely colonial nesters and can be found in most PJ woodlands within the LSFO. Juniper titmouse are cavity nesters, and also utilize most of the PJ woodlands within the field office. Both species can be found within Colorado year-round.

Raptor species are tied to several different habitat types with in the LSFO. Sagebrush and other shrublands provide open spaces for hunting, while rocky outcrops, woodlands, sporadic trees and cottonwood forests provide nesting substrates. Red-tailed hawk, golden eagle and bald eagle likely nest and hunt near the Horse Gulch Allotment.

More generally, birds associated with this allotment are well distributed in extensive suitable habitats throughout the LSFO and northwest Colorado and habitat-specific bird assemblages appear to be composed and distributed appropriately to the normal range of habitat variability.

Environmental Consequences, Proposed Action: While livestock grazing can directly impact reproductive success of migratory songbirds by trampling of nests, it is more likely that it indirectly influences reproductive success due to changes in vegetation such as species composition, height or cover. This grazing system would allow for ample growing season rest on the allotment as a whole and adequate plant recovery periods.

Grazing would coincide with migratory bird nesting under this alternative. Spring grazing has the potential to reduce the amount of herbaceous cover available for nest concealment. Herbaceous cover is an important component for several ground nesting species. Standard terms and conditions would limit utilization to a moderate rate. This, combined with movement of livestock through the allotment would minimize any potential impacts to ground nesting species. During land health assessments and recent allotment visits, the uplands were found to be in good condition, providing suitable habitat for migratory bird species. These conditions are expected to continue under the grazing system described in the proposed action. Riparian habitats (except the Yampa River) on the allotment were receiving concentrated livestock use during assessments of riparian condition. This is likely due to a lack of dependable upland water sources. Proposed water development projects would help to alleviate pressure on riparian systems and distribute

livestock across pastures. Overall, the proposed action would be compatible with maintaining local migratory bird populations.

The proposed pipelines, tanks and fence construction would have minimal impacts to migratory birds. Nesting attempts may be disrupted and some nests may be accidentally destroyed if the water developments were constructed during the breeding season (May – July). As this would only impact a small area of habitat, potential for impacts would remain low.

Environmental Consequences, No Action Alternative: Impacts from the current grazing system would be similar to those described in the proposed action. However, none of the range improvement projects would be constructed under this alternative and benefits associated with these projects would not occur.

Environmental Consequences, No Grazing Alternative: This alternative would lead to increases/improvements in vertical structure, composition and density of herbaceous understory on the allotment as a whole from current conditions. Benefits associated with livestock removal would be most expected in those areas that currently experience concentrated livestock use (such as water sources). Response by migratory birds to vegetative changes would depend on the species, likely providing the greatest benefit to ground and low shrub nesters.

Environmental Consequences, Cumulative Impacts: The primary use of the allotment and the surrounding area is livestock grazing, recreation (hunting) and recent oil and gas development. Continuation of grazing would not be expected to add substantially to existing or proposed disturbances.

3.3.3 Special Status Animal Species

Affected Environment: The Horse Gulch Allotment provides habitat for the Colorado pikeminnow. This species is listed as endangered under the Endangered Species Act (ESA) and the Yampa River is mapped as Designated Critical Habitat (DCH). There are no other ESA listed or proposed species that inhabit or derive important benefit from habitats within the allotment. DCH for bonytail, humpback chub and razorback sucker are located downstream from the allotment.

The allotment provides important habitat for greater sage-grouse, a BLM sensitive species, and a candidate for ESA listing. In 2012, Colorado Parks and Wildlife updated greater sage-grouse mapping data to include Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH). Areas that have been identified as having the highest conservation value to maintaining sustainable greater sage-grouse populations were mapped as PPH. Sage-grouse occupied habitats outside of PPH were mapped as PGH. Approximately a third of the allotment is mapped as PPH and the rest is mapped as PGH. There are 1700 acres of PPH on BLM lands within the allotment.

There are four active greater sage-grouse leks within the boundaries of the Horse Gulch Allotment. The allotment provides nesting, brood-rearing and winter habitat for grouse. Reproductive functions (breeding, nesting and brood-rearing) are considered the most important grazing-related aspect of sage-grouse biology. Lekking would likely take place in the general

area from late March through early May with most nesting occurring mid-April through mid-June. In general, broods would appear from late May to early June.

The allotment also provides habitat for two additional BLM sensitive species, bald eagle and Brewer's sparrow. There are no bald eagle nests located within the allotment. However, there are several bald eagle winter roost sites located along the Yampa River and the allotment provides winter habitat for this species. In general, bald eagles would utilize the allotment during the winter months when opportunistically feeding on winter killed big game species.

Brewer's sparrows are a summer resident in Colorado and nest in sagebrush stands. Nests are constructed in sagebrush and other shrubs in denser patches of shrubs. This species would likely be nesting in the area of the proposed action from mid-May through mid-July.

Environmental Consequences, Proposed Action:

Colorado pikeminnow
Properly managed grazing would not be expected to degrade or impair riparian systems. Improperly managed livestock grazing could potentially impact DCH by disturbing, removing or altering riparian vegetation and disturbing soils. Vegetation alteration or removal may decrease: cover, soil stability, forage base and nutrient levels and may impair stream morphology, water quality and water temperature. Concentrated livestock use could potentially cause physical damage to limited and important micro-habitats, such as backwaters. Livestock trampling could impair or reduce the usability of backwaters by changing egress/ingress or water flow patterns. These impacts would only occur with improperly managed riparian grazing.

Livestock grazing, as described in the proposed action, would have minimal impacts to Colorado pikeminnow and DCH. Since access to the Yampa River by livestock grazing on public lands is limited and livestock would only have access to the river for a short period of time each year, the above mentioned impacts would be isolated and limited. Grazing would not permanently alter the physical characteristics of habitat to the point that usability is reduced or compromised. High spring flows of sufficient size would help to reform and shape backwaters on a regular basis. Information from riparian assessments showed that the reaches of the Yampa River that border the BLM lands within the allotment is in good condition under the current grazing system. These riparian conditions would continue under the proposed action. Overall, it is expected that the proposed grazing regime is compatible with maintaining important characteristics of Colorado pikeminnow habitat. Informal Section 7 consultation was completed with the USFWS regarding grazing on the allotment. A "may affect, not likely to adversely affect" determination was found and USFWS conferred with this finding.

Given that the proposed action would result in a minor water depletion from the Colorado River basin, this project falls under BLM Colorado's Programmatic Biological Assessment (PBA) for water depleting activities (excluding fluid minerals development) on BLM lands in the Colorado River basin in Colorado (BLM 2008). In response to BLM's PBA, the U. S. Fish and Wildlife Service (FWS) issued a Programmatic Biological Opinion (PBO)(ES/GJ-6-CO-08-F-0010) on February 25, 2009, which concurred with BLM's determination that water depletions are "Likely to Adversely Affect" the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker.

Likewise, the project is also likely to adversely affect designated critical habitats for these endangered fish along the Green, Yampa, and Colorado rivers. However, the FWS also determined that BLM water depletions from the Colorado River Basin are not likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, or razorback sucker, and that BLM water depletions are not likely to destroy or adversely modify designated critical habitat.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated in January 1988. The Recovery Program serves as the reasonable and prudent alternative to avoid jeopardy and aid in recovery efforts for these endangered fishes resulting from water depletions from the Colorado River Basin. The PBO addresses internal and external BLM projects including impoundments, diversions, water wells, pipelines, and spring developments. The FWS determined that projects that fit under the umbrella of the PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts to the Upper Colorado River Basin if they deplete relatively small amounts of water (less than 100 acre feet). BLM makes a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual acre-feet depleted by each project. The PBO instructed BLM to make an annual payment to the National Fish and Wildlife Foundation (NFWF) to cover all BLM authorized actions that result in water depletions. This project has been entered into the LSFO water depletion log which will be submitted to the BLM Colorado State Office (CSO) at the end of the Fiscal Year. The CSO is responsible for paying depletion fees based on the annual statewide total.

Greater sage-grouse

Livestock grazing has the potential to reduce residual grass cover, an important habitat component for sage-grouse nest concealment. Season long grazing, concentrated fall grazing or grazing the same areas in the spring and then again in the fall would have the most impacts on residual grass cover since there would be little to no opportunity for re-growth before the nesting season. The proposed action would permit a total of 1205 AUMs between April and December each year. Livestock would be rotated through the allotment and grazed in conjunction with private land, ensuring that no area would be grazed during the entire growing season each year. In regards to herbaceous understory, new growth would be subject to grazing pressure in pastures that are used early in the season. However, these same pastures would provide good residual grass cover the next nesting season since most would have no fall grazing. Opportunity for new growth for nest concealment would not be impacted in pastures that are used late in the season, however, there would be some reduction of residual grass cover in these pastures for the subsequent nesting season.

The Horse Gulch Allotment was meeting Land Health Standards and adequate cover for nest concealment in the form of new growth and residual cover was present during recent allotment visits. Riparian habitats (except the Yampa River) on the allotment were receiving concentrated livestock use during riparian assessments. This is likely due to a lack of dependable upland water sources. Proposed water development projects would help alleviate pressure on riparian systems and distribute livestock across pastures. Overall, the proposed action would be compatible with maintaining suitable habitat for greater sage-grouse.

The construction of the proposed pipelines, tanks and fence would have minimal impacts to greater sage-grouse if implemented in accordance with the stipulations in the proposed action. Nesting attempts may be disrupted and some nests may be accidentally destroyed if the water developments were constructed during the breeding and nesting season (March 1 – June 30). Fences can provide new perch sites for raptor species, some of which prey on grouse. Fences also have the potential to result in mortality of individual grouse from collisions with wires which have low visibility. Fences near leks pose a greater risk to grouse species. Since the proposed fence is not in close proximity to any of the four leks located within the allotment, it would not result in high mortality of grouse.

Bald eagle
No bald eagle nests are located within the allotment. However, this species likely hunts in upland habitats in the general area and uses winter roost sites along the Yampa River. During the winter, bald eagles are likely present within the allotment, feeding on road or winter killed big game. The proposed action would improve or maintain vegetative conditions in the allotment, which would continue to provide suitable habitat for upland prey species. Overall this alternative would be compatible with maintaining healthy habitat for bald eagles and prey species.

Brewer's sparrow
Impacts to Brewer's sparrow can be found in Section 3.3.2 Migratory Birds.

Environmental Consequences, No Action Alternative: Impacts from the current grazing system would be similar to those described in the proposed action. However, none of the range improvement projects would be constructed under this alternative and benefits associated with these projects would not occur.

Environmental Consequences, No Grazing Alternative: This alternative would lead to increases/improvements in vertical structure, composition and density of herbaceous understory on the allotment as a whole from current conditions. Benefits associated with livestock removal would be most expected in those areas that currently experience concentrated livestock use (such as existing water sources and riparian areas). Improvements in herbaceous understory (height and density) would enhance nesting conditions for greater sage-grouse throughout the allotment as a whole.

Environmental Consequences, Cumulative Impacts: Cumulative Impacts would be similar to those described in Section 3.3.2 Migratory Birds.

3.3.4 Upland Vegetation
Affected Environment: The vegetation throughout the Horse Gulch Allotment consists of sagebrush grassland communities and mountain shrub communities. Dominant species include Wyoming big sagebrush, fringed sagebrush, western wheatgrass, needle and thread, prairie junegrass and juniper trees. Additional non-native species are also present including crested wheatgrass, cheatgrass, perennial pepperweed, whitetop, musk thistle, and scotch thistle.

As a whole, the composition of the plant communities within the allotment is appropriate, and density and production of key species are adequate.

Environmental Consequences, Proposed Action: Implementation of a livestock rotation system that includes grazing utilization periods during alternating seasons of plant growth would allow for a more productive and diverse plant community. When annual utilization occurs at different stages of the plant growth cycle plant vigor, diversity, and productivity improve through maintaining and restoring carbohydrate reserves and regenerating root mass.

Additionally, the construction of permanent water sources on private and/or public land would provide the infrastructure to implement a grazing rotation that is independent of available ephemeral and seasonal water sources. These additional water sources would more evenly distribute livestock utilization away from current water sources, such as the riparian vegetation communities, that currently experience loafing and concentrated use. As a result, a greater percentage of the total pasture could provide a forage resource resulting in a more even utilization level throughout.

This alternative combines appropriate management of upland vegetation with grazing rotation flexibility. Upland vegetation conditions would improve in portions of the allotment under this alternative.

Environmental Consequences, No Action Alternative: This alternative continues the current authorized use outlined in the existing grazing lease. Much of the pasture name designations do not correlate with actual pasture map data and were not familiar to the grazing lessee. The fixed grazing rotation provides desirable benefits for plant growth including rest and rotation but some pastures do not receive alternating seasons of use. Additionally, without permanent water sources, the fixed rotation schedule may not have seasonal water available at the designated use period. This alternative provides for desirable management of the upland vegetation but is difficult and somewhat unrealistic to implement in conjunction with the livestock grazing use on adjacent public lands. Under this alternative current vegetation conditions would be maintained.

Environmental Consequences, No Grazing Alternative: Not allowing livestock use on the Horse Gulch Allotment would result in reduced herbivory throughout the herbaceous portions of the plant communities. Wildlife use would continue and elk, whose dietary overlap with cattle is considerable, would continue to use the allotment. Additional concentrated use near seasonal water sources would likely still continue and non-native species would still be present with the potential to increase. Current upland vegetation conditions would continue.

Environmental Consequences, Cumulative Impacts: All facets of the plant communities on the allotment are affected by climate, wildlife, and direct disturbance through the presence of roads and other physical facilities both within and adjacent to the allotment. Past agricultural practices along with energy development and recreation use have and would continue to affect the vegetation community within the allotment. When added to the existing activities in and adjacent to the Horse Gulch Allotment, approval of the proposed action would not cause undue damage to upland vegetation.

3.3.5 Wildlife, Aquatic

Affected Environment: Streams and riparian areas support aquatic wildlife within the general area. The Yampa River provides habitat for a number of native fish species, including speckled dace, roundtail chub, mottled sculpin, flannelmouth sucker and bluehead sucker. Smaller, ephemeral creeks, springs and riparian areas provide habitat for amphibians and non-vertebrate aquatic wildlife. Amphibians occurring within the resource area include western chorus frog, tiger salamanders, Great Basin spadefoot toad and northern leopard frogs.

Environmental Consequences, Proposed Action: The grazing system described in the proposed action would maintain and improve riparian habitat, in turn, providing suitable habitat for aquatic wildlife species. Rest/deferment and rotational grazing systems can help prevent riparian degradation and minimize any potential impacts to aquatic wildlife. Data from allotment visits showed concentrated livestock use in several riparian areas. Construction of dependable upland water sources should help to alleviate this concentration as alternate water sites would be available for livestock.

Environmental Consequences, No Action Alternative: Impacts from the current grazing system would be similar to those described in the proposed action. However, none of the range improvement projects would be constructed under this alternative and benefits associated with these projects would not occur.

Environmental Consequences, No Grazing Alternative: Elimination of livestock grazing would result in improved riparian conditions and may improve ecological condition. As conditions improve, the health, vigor and abundance of riparian vegetation would increase, providing healthy and productive habitat for aquatic wildlife species.

Environmental Consequences, Cumulative Impacts: Cumulative impacts to aquatic habitats would be similar to those described in Section 3.3.7, Wetlands and Riparian Zones.

3.3.6 Wildlife, Terrestrial

Affected Environment: Terrestrial wildlife habitats on the allotment are comprised primarily of sagebrush stands with small areas of PJ woodlands. A variety of wildlife habitats and their associated species occur in the general area. Common species such as coyotes, cottontail rabbits and ground squirrels use these habitats. The allotment provides important habitat for elk, mule deer and pronghorn. Portions of the allotment are classified as critical winter habitat for mule deer and winter concentration areas for pronghorn and elk.

Environmental Consequences, Proposed Action: Livestock grazing can alter vegetation structure, composition and function. Effects on terrestrial wildlife are dependent on the species of interest and may be adverse or beneficial depending on grazing: numbers, timing, frequency and intensity. The grazing system described in the proposed action incorporates deferment and rotation, which allows for ample growing season rest and adequate plant recovery periods. During land health assessments and recent allotment visits, the uplands were found to be in good condition, providing suitable habitat for wildlife species. These conditions are expected to continue under the grazing system described in the proposed action. Riparian habitats (except the Yampa River) on the allotment were receiving concentrated livestock use as noted during

riparian assessments. This is likely due to a lack of alternate upland water sources. Proposed water development projects would help to alleviate pressure on riparian systems and distribute livestock across pastures.

Water development: The proposed pipelines and water tanks would have minimal impacts to wildlife species. Habitat in the immediate vicinity of the tanks would be degraded by livestock congregation. However, this would not affect the productivity of the surrounding habitat. The water developments would also provide additional water sources for wildlife species.

Fencing: Fences have potential to result in mortality of big game species as elk, mule deer and antelope can become entangled in fence wires during crossing. The fence would be built to BLM wildlife standards, reducing the risk for entanglements.

Environmental Consequences, No Action Alternative: Impacts from the current grazing system would be similar to those described in the proposed action. However, none of the range improvement projects would be constructed under this alternative and benefits associated with these projects would not occur.

Environmental Consequences, No Grazing Alternative: This alternative would lead to increases/improvements in vertical structure, composition and density of herbaceous understory on the allotment as a whole from current conditions. Benefits associated with livestock removal would be most expected in those areas that currently experience concentrated livestock use (such as water sources). Overall, wildlife species that would receive the most benefit would be grazing species and species that use herbaceous understory for hiding cover and nest concealment.

Environmental Consequences, Cumulative Impacts: Cumulative impacts to terrestrial wildlife would be similar to cumulative impacts described in Section 3.3.2, Migratory Birds.

3.3.7 Wetlands and Riparian Zones

Affected Environment: Riparian resources within the Horse Gulch Allotment are described below. The reaches of the Yampa River adjacent to the allotment were last assessed in 2010; lentic areas and springs were assessed in 2013.

Condition Assessment	Wetlands/Springs (acres)	Streams (miles)
Proper Functioning Condition		Yampa River Reaches 16-19: 13.75
Functioning At Risk – no trend in condition	4 springs: 0.4	
Functioning At Risk – condition degrading	Horse Gulch[1]: 53 Sand Springs Gulch[1]: 25	
Not Assessed	4 springs: 0.4	
TOTAL	**77.4 acres**	**13.75 miles**

[1] Horse Gulch and Sand Springs Gulch were formerly assessed as lotic, or flowing water, resources. The IDT decided at the 2013 field visit that since these gulches are primarily spring-fed or seasonal draws, the lentic resource assessment is a better fit for these areas and thus re-categorized and assessed these areas as lentic.

Lotic

The four reaches of the Yampa River that form the southern border of the allotment are meeting the public land health standard for riparian systems. Livestock use is evident in some areas, but no degradation was observed. Many sections of the river are inaccessible to livestock because of fencing or steep topography.

Lentic

Horse Gulch and Sand Spring Gulch are actually a collection of seeps/springs within channels that support low flows only during spring runoff or area storms; several seeps to the side of the main drainage are not recorded. Significant livestock use is localized at any available surface water source, thereby limiting the overall functionality of the drainage. Little to no vegetation is present at these areas to prevent localized erosion. Where riparian species do exist, health and vigor is low. A two-track, which is also used by livestock as a travel route, parallels much of the Sand Spring drainage and bisects a couple of the springs. Livestock trailing occurs along the entire length of Horse Gulch.

A 1995 note in the Sand Spring Gulch riparian file explains that "Sand Spring Gulch was divided into two reaches. The first reach was confined to a stream channel while the second reach was more of a salt flat. Reach 1 is dominated by foxtail barley and rushes. Reach 2 is dominated by alkali sacaton and *Salicornia rubra* (both native species that are indicators of highly alkali soil and water conditions). The area was heavily impacted by livestock, but this could be related to the soil type. The current grazing system calls for 149 cows from 5/1 – 11/30; utilization was moderate to high." Much of this description remains applicable today. Both gulches have experienced historic over use and the lack of developed upland water sources in this very large allotment, combined with the potential for long grazing season has led to the current, generally poor conditions for riparian areas and the adjacent uplands. Based on photos and notes from the 1982 spring inventories, it appears that conditions have not changed much, especially since growing season-long grazing management has remained more or less the same since then. Overall, the public land health standard for lentic riparian resources (standard #3) is not being met.

Environmental Consequences, Proposed Action: The proposed action removes the defined rotation schedule but builds in seasonal flexibility for use between pastures and provides for growing season rest in Horse Gulch and Fuhr Gulch pastures every other year. It also reduces growing season use from 60 days to 30 days, which in combination with proposed additional water source development, should result in noticeably improved lentic conditions within a few years.

The access road along Sand Springs Gulch would continue to be used for occasional infrastructure maintenance. The presence of this road, even though it runs parallel or across the drainage, is not a significant source of degradation. Reducing livestock pressure along the gulch would also reduce their use of this road for travel along the drainage, which would lead to an increase in vegetative cover both along the road and between the road and the drainage bottom.

Environmental Consequences, No Action Alternative: In practice, livestock are present annually in the two pastures where most of the publicly managed riparian resources occur from roughly April 15-June 15. The lentic riparian conditions described above are likely to persist or could degrade to a nonfunctioning state if grazing management were to remain the same. The Public Land Health Standard for riparian resource would continue to not be met under this alternative. Already in acceptable shape, riparian conditions along the Yampa River would continue to meet standards.

Environmental Consequences, No Grazing Alternative: Generally speaking, removing cattle from the allotment would improve riparian and wetland resource conditions over the long-term. A decrease in herbivory on riparian vegetation, and trampling pressure caused by livestock in riparian areas, would increase soil moisture and reduce the potential for erosion and any associated changes to channel geomorphology and wetland form/function, particularly in low and moderate gradient streams where the presence of riparian vegetation is one of the most important factors in maintaining stability. In ephemeral channels and wetlands, reduced livestock grazing pressure would also maintain or raise seasonal water tables during the dry season to a point where facultative and obligate riparian plant species would be able to persist or even expand, thereby further increasing channel stability. However, these benefits may not fully be realized if the riparian resource is used by wildlife, particularly large ungulates, since wildlife can also have similar impacts to riparian resources, especially during periods of drought. Also, livestock grazing on adjacent private and other non-federal lands within the allotment would continue to produce direct effects to riparian resources that may indirectly affect riparian resources on federally managed lands.

Environmental Consequences, Cumulative Impacts: Past, present, and reasonably foreseeable actions that affect riparian areas in the Sandhills area of the Yampa River Basin primarily include ranching, some fluid mineral exploration and development, and the infrastructural development necessary to support these two activities.

The Sandhills area is characterized by a few relatively low gradient perennial and several ephemeral drainages, many of which have parallel dirt or gravel roads, that drain into the Yampa River. The effect to riparian areas due to any fluid mineral and infrastructural development is primarily sedimentation, a result of the construction and maintenance of roads and pads adjacent to any riparian areas in the watershed. The portion of sediment that is delivered to the drainages and therefore the Yampa River as a direct consequence of these improvements is not known, but is likely to occur during the spring high flow period coincident with the natural sediment discharge peak as well as summer storm events. The presence of roads parallel to drainages can restrict natural lateral movement of waterways over the long term by armoring and/or straightening banks and reducing any floodplain capability to moderate overbank flooding.

Most private lands occur along the Yampa River; public lands within the basin are intermixed with private and State lands, which are also included in many of the grazing allotments. Where land health/riparian assessments are available, riparian standards are mostly being met. Roads adjacent to the floodplain or the presence of invasive species are usually cited as compromising riparian health in these instances. Livestock use of riparian areas on public lands is light to moderate, as many private portions of the allotments include water developments that help to

keep extended livestock use away from these sensitive areas. Riparian condition on private lands within the watershed is not known.

3.4 HERITAGE RESOURCES AND HUMAN ENVIRONMENT

3.4.1 Cultural Resources

Affected Environment: The BLM's authorization of grazing permits and leases is considered an undertaking subject to compliance with Section 106 of the National Historic Preservation Act (NHPA). The BLM has the legal responsibility to consider the effects of its actions on cultural resources located on federal land. BLM Manual 8100 Series; the Colorado State Protocol; and BLM Colorado Handbook of Guidelines and Procedures for Identification, Evaluation, and Mitigation of Cultural Resources provide guidance on Section 106 compliance requirements to meet appropriate cultural resource standards. Section 106 of NHPA requires federal agencies to: 1) inventory cultural resources within federal undertaking Areas of Potential Effect (APEs), 2) evaluate the significance of cultural resources by determining National Register of Historic Places (NRHP) eligibility and, 3) consult with applicable federal, state, and tribal entities regarding inventory results, NRHP eligibility determinations, and proposed methods to avoid or mitigate potential impacts to eligible sites.

In Colorado, the BLM's NHPA obligations are carried out under a Programmatic Agreement (PA) among the BLM, the Advisory Council on Historic Preservation, and the State Historic Preservation Officer (SHPO). Should an undertaking be determined to have "no effect" or "no adverse effect" by the BLM-LSFO archaeologist, the undertaking may proceed under the terms and conditions of the PA. If the undertaking is determined to have "adverse effects," project-specific consultation is then initiated with the SHPO. Additionally, cultural resources assessment of grazing allotments follows the procedures and guidance of the Colorado BLM State Director as provided in BLM Instructional Memorandums (IMs) IM-WO-99-039, IM-CO-99-007, IM-CO-99-019, and IM-CO-2002-29.

The culture history of northwestern Colorado is presented among several recent context studies. Reed and Metcalf's (1999) study of the Northern Colorado River Basin provides applicable prehistoric and historic overviews as compiled by Frederic J. Athearn (1982) and Michael B. Husband (1984). A historical archaeology context also was prepared for the State of Colorado by Church et al. (2007). Furthermore, significant cultural resources administered by the BLM-LSFO are provided in a Class 1 (archival) overview (McDonald and Metcalf 2006), in addition to valuable contextual data provided by synthesis reports of archaeological investigations conducted for a series of large pipeline projects in the BLM-LSFO management area (Metcalf and Reed 2011; Rhode and others 2010; Reed and Metcalf 2009).

A Class 1 cultural resources assessment was completed for the Horse Gulch Allotment by BLM-LSFO cultural program staff on January 29, 2014. Data reviewed were obtained from BLM-LSFO cultural program project files, site reports, and atlases, in addition to BLM-maintained General Land Office (GLO) plats and patent records. Electronic files also were reviewed through online cultural resource databases including *Compass* (maintained by the Colorado Office of Archaeology and Historic Preservation) and the National Register Information System (NRIS; maintained by the National Park Service). The results of archival research are summarized in the

following table; data provided are focused on BLM-administered lands within the specified allotment, and based on information available from the above-referenced sources.

Allotment No. (BLM acres)	BLM Acres Previously Surveyed	BLM Acres NOT Surveyed	Percent of BLM Acres Inventoried Within Allotment	Identified NRHP-Eligible or Needs Data Sites	Estimated Sites Within Allotment*	Estimated NRHP-Eligible or Needs Data Sites Within Allotment*
4065 (10,200)	767	9,433	7.5	3	306	92

*Estimated site density as based on existing inventory data for all lands within the specified allotment. Estimates may be revised (up or down) by future inventories and/or consultations.

Background research shows that prior cultural resource inventories have covered approximately 770 acres of BLM-administered land within the subject allotment. Prior investigations have resulted in the identification of 10 cultural resource sites including prehistoric open camps and historic-age features. Within the subject allotment, two sites (5MF.2551 and 5MF.6511) are considered *historic properties*—i.e., determined NRHP-eligible or "needs data"—and warrant further consideration. The remaining eight sites were previously determined as not eligible for NRHP listing and no further work or consideration is necessary as part of the current undertaking.

Site 5MF.2551 consists of a prehistoric open camp that was initially recommended as "needs data" (Lennon and Wheeler 1987), but recently determined NRHP-eligible as a result of site reassessment and the identification of multiple diagnostic artifacts. Recent records also indicate that the site is in stable condition with no evidence of grazing or livestock impacts (Connor and Darnell 2011).

Site 5MF.6511, "Jackie's Yampa Valley Overlook" (previously documented as Jackie's Wickiups), was initially documented by the BLM-LSFO as a possible wickiup village (Morris et al. 2007), however, subsequent assessment determined that the identified wickiup features represented recently harvested cedar posts that were likely stockpiled for fencing installations, as evidenced by chainsaw marks and other factors (Martin and Lindstrom 2009). The site also contains a prehistoric lithic concentration and a mining prospect pit. The site was previously determined NRHP-eligible and recent documentation shows no evidence of observed livestock impacts.

In addition to the aforementioned cultural resource sites, historic-age GLO plats show evidence of previously constructed features within the subject allotment such as unnamed roads, fencelines, and irrigation ditches, however, such features are not likely to be considered significant (or NRHP-eligible).

Based on the available data for the surrounding vicinity it is estimated that 306 cultural resource sites likely exist within the subject allotment, of which approximately 92 (roughly one-third) may be evaluated as NRHP-eligible. As such, cultural resources inventory for a select portion of the subject allotment should be conducted within 10 years of permit issuance. Subsequent inventory should focus on potential areas of livestock concentration and where background

research indicates the potential for cultural resources. Additionally, identified NRHP-eligible and "needs data" sites should be monitored for potential livestock impacts. If, as a result of new assessment and/or monitoring, NRHP-eligible sites or features are found to exhibit potential for or actively occurring impacts, mitigation measures will be identified and implemented in consultation among the BLM-LSFO, SHPO, and applicable consulting parties.

Environmental Consequences, Proposed Action: Direct impacts to historic properties where livestock concentrate may include trampling, chiseling, and churning of site soils, cultural features and artifacts, artifact breakage, and impacts from standing, leaning, or rubbing against historic structures, above-ground cultural features and/or rock art (Broadhead 2001; Osbourn et al. 1987). Historic properties may also be directly or indirectly impacted by surface disturbing activities or the construction/modification of a building, structure, facility, or infrastructure. Indirect impacts may include increased soil erosion and gullying, in addition to increased potential for unlawful artifact collection and/or vandalism of cultural resources. Other indirect impacts may include degradation of the historic setting, thereby detracting from the view-shed and historic feeling of nearby cultural resource sites.

As identified, the specific range improvement components of the proposed action involve construction and/or ground disturbance and, therefore, have potential to impact historic properties. The proposed use and maintenance of an access road along Sand Springs Gulch and the Cannon Fenceline project require additional cultural resources assessment to fulfill NHPA compliance. The proposed pipeline and tank installations have been subject to cultural resources inventory and assessment as reported in the following:

> Reed, Charles A. 2013. *Class III Cultural Resource Inventory of the Ex Corporation Livestock Watering System in Moffat County, Colorado*. NRCS-CRAI13-09; BLM-LSFO #83.2.2013. Alpine Archaeological Consultants, Inc., Montrose, Colorado.

As a result of the study, five cultural resource sites were identified within the inventoried areas, of which only two have been determined NRHP-eligible (Nichols [SHPO] to Volf [NRCS], November 22, 2013; SHPO Project #65036). No historic properties were located on BLM-administered lands and NRCS is the federal lead for NHPA compliance. Additional assessment and redesign of portions of the project area are currently underway to avoid adverse effects to two historic properties identified on private lands, however, no alterations are anticipated for project implementation on BLM-administered lands (Volf [NRCS] to Ryan [BLM-LSFO], January 7, 2014).

Environmental Consequences, No Action Alternative: Potential impacts to cultural resources for this alternative are generally the same as the proposed action with the exception of the range improvement projects.

Environmental Consequences, No Grazing Alternative: While a no grazing alternative alleviates potential damage from livestock activities, cultural resources are constantly subject to site formation processes or events after creation (Binford 1981; Schiffer 1987). These processes can be both cultural and natural, and may occur instantly or over thousands of years. Cultural formation processes include activities directly or indirectly caused by humans. Natural processes

include chemical, physical, and biological processes of the natural environment that impinge upon and/or modify cultural materials.

Environmental Consequences, Cumulative Impacts: Cumulative impacts to historic properties may occur within or adjacent to the allotment, including areas within the allotment view-shed. However, the region has been historically grazed (for more than 50 years) and the intensity of livestock use has generally decreased over time. Any extant historic properties within or adjacent to the allotment—and where potential for impacts exist—are more likely to have sustained impacts as a result of prior livestock/grazing activities or other historic land-use activities (e.g., mining, agriculture, etc.). Although continued livestock use may not pose additional, direct impacts in areas where prior grazing was intensive, secondary effects such as increased erosion could cause long-term, irreversible effects to historic properties, where present. Livestock use also has increased ground visibility over time as a result of increased erosion and decreased ground cover, and by the installation and/or removal of range improvements such as stock ponds and pipelines. These factors may result in the exposure of cultural deposits that would otherwise remain obscured or buried, thereby raising the potential for illegal collection of cultural materials.

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Osbourn, Alan, Susan Vetter, Ralph Hartley , Laurie Walsh, Jesslyn Brown
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Rhode, David, Lisbeth A. Louderback, David Madsen, and Michael D. Metcalf
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3.4.2 Native American Religious Concerns

Affected Environment: Four Native American tribes have cultural and historical ties to lands administered by the BLM-LSFO. These tribes include the Eastern Shoshone, Ute Mountain Ute, Uinta and Ouray Agency Ute, and the Southern Ute.

American Indian religious concerns are legislatively considered under several acts and Executive Orders including the American Indian Religious Freedom Act, the Native American Graves Environmental Assessment Protection and Repatriation Act, and Executive Order 13007 (Indian Sacred Sites). In sum, and in concert with other provisions such as those found in the NHPA and Archaeological Resources Protection Act, these acts and orders require the federal government to carefully and proactively consider the traditional and religious values of Native American culture and lifeways to ensure, to the greatest degree possible, that access to sacred sites, treatment of human remains, the possession of sacred items, conduct of traditional religious practices, and the preservation of important cultural properties are not unduly infringed upon. In some cases, these

concerns are directly related to historic properties and archaeological resources. Likewise, elements of the landscape without archaeological or human material remains also may be involved. Identification of Native American concerns is normally completed during land-use planning efforts, reference to existing studies, or through direct consultation with tribes.

Consultation for the type of proposed undertaking is consulted on annually with the aforementioned tribes. Letters are being sent to the tribes in the spring of 2014 describing general range permitting and projects as planned for the 2014-5 fiscal years. Project-specific consultation is not typically conducted unless activities are proposed within a previously identified area of tribal concern or if an undertaking may involve culturally significant items, sites and/or landscapes.

Environmental Consequences, Proposed Action: Items, sites, or landscapes determined as culturally significant to the tribes can be directly or indirectly impacted. Direct impacts may include, but are not limited to, physical damage, removal of objects or items, and activities construed as disrespectful (e.g., installation of portable toilets near a sacred site). Indirect impacts may include, but are not limited to, prevention of access (hindering the performance of traditional ceremonies and rituals), increased visitation of an area, and potential loss of integrity related to religious feelings and associations.

There are no known items, sites, or landscapes determined as culturally significant to the tribes within or immediately adjacent to the allotment. The proposed action does not prevent access to any known sacred sites, prevent the possession of sacred objects, or interfere with the performance of traditional ceremonies and/or rituals.

Environmental Consequences, No Action Alternative: Potential impacts for this alternative are generally the same as the proposed action.

Environmental Consequences, No Grazing Alternative: None.

Environmental Consequences, Cumulative Impacts: Continued livestock grazing has the additive effect of altering the landscape from that ancestrally known by the tribes. Although specific, culturally sensitive sites have not been identified within the allotment or immediate vicinity, the overarching concern is for cumulative effects that modern culture and/or developments cause upon the landscape.

3.5 RESOURCE USES

3.5.1 Livestock Operations

Affected Environment: The land ownership within the Horse Gulch allotment is 27% BLM. Some pastures are exclusively private parcels while some are integrated with BLM and private. Pasture separations include structural fencelines as well as topographic features. Livestock operations within the allotment incorporate other BLM grazing permits as well as private lands outside the grazing allotment.

Environmental Consequences, Proposed Action: Under this alternative livestock operations would be implemented to incorporate the BLM and private land parcels, in regards to livestock management, while striving for a sustainable watershed approach. Rangeland improvement projects on private land provide a resource benefit to public land in this case for a stockwater source and distribution of water resources and grazing utilization across the landscape. The construction impacts from the pipeline and fenceline crossing BLM parcels would be minimal while providing livestock operation benefits.

Environmental Consequences, No Action Alternative: This alternative provides for continued coordination of the private and public land livestock grazing operations but does not authorize the additional benefits to be realized through the implementation of the range improvement projects.

Environmental Consequences, No Grazing Alternative: The ability of the livestock operator to operate a functional livestock operation would be severely curtailed under this alternative. Excluding the BLM parcels from the livestock grazing that would continue to occur on adjacent private land would require fencing infrastructure to prevent trespass. Not only would this cost be extensive but additional resource concerns associated with these fencelines and resulting impacts would occur.

Environmental Consequences, Cumulative Impacts: The raising of livestock is one of the principal economic activities carried out across northwest Colorado. The operations of the proponent are typical to such operations in the region. There are no impacts to other livestock operations from any of the alternatives.

3.5.2 Recreation

Affected Environment: The Proposed Action encompasses the northern portion of the Little Yampa Canyon Special Recreation Management Area (SRMA). This SRMA is to be managed to provide river boating, big game hunting, camping, wildlife viewing and interpretation/education opportunities for local communities and visitors to the area (LSFO RMP/ROD October 2011). The Yampa River provides recreation opportunities such as canoeing, kayaking and rafting. In January 1999, under a cooperative agreement with BLM, the Colorado Department of Parks and Wildlife became the primary manager of the Yampa River public land access sites.

Currently, livestock access the Yampa River from grazing allotments on both the north and south sides from public and private lands. Each side of the river is permitted to a different grazing permittee and each operator has a varying season of use. Livestock grazing is contributing to streambank degradation along the Yampa River in localized areas which has a direct effect on visual resources, camping, picnicking and fishing opportunities, and the overall recreational experience. The locations that people seek for camping (relatively level ground, water, shade) are the same locations that livestock seek as bedding grounds. Aesthetics can be greatly depreciated by trampled or denuded vegetation and the smell and nuisance of cow manure. Recreational fishing opportunities are dependent on a healthy river condition.

Environmental Consequences: Proposed Action: Placing a pump in the river, with an associated diesel-powered generator would impact the solitude and visual characteristics of the river. Most

portable generators produce approximately 75dBA measured at 23 feet from the source (about the same amount as a vacuum cleaner or a hair dryer). The noise from the generator would be considered "faint" at approximately 740 feet upstream of its location, becoming progressively louder as the generator is passed by, then becoming progressively quieter as the generator is passed (Environmental Noise Control, ATCO Structures and Logistics, http://www.atcoem.com/Resources/Documents/Noisecontrolhandbook.pdf)

Emissions from the generator would likely hang in the canyon, especially on calm, cool days. This would also detract from the recreational experience of boating, camping and other forms of recreation in the Little Yampa Canyon SRMA.

While the noise and emissions from the pump and associated power source may have a negative effect on recreation at this location, the positive effects from removing cattle from the river could possibly outweigh the negative. The impacts of the generator would be localized and short-lived, whereas the impacts of cattle grazing on the riverbanks could stretch for miles. Improving streambank vegetation and water quality would improve the camping and fishing experience and would improve overall visual enjoyment of the area.

Environmental Consequences, No Action: Under this alternative, there would be no change to current livestock management practices. The impacts associated with the pump, generator, fences, pipeline and tanks would not occur. Livestock grazing would continue at its current levels along the river and recreationists would continue to share the river corridor with cattle.

Environmental Consequences, No Grazing Alternative: Under this alternative, the overlap of land-use between recreation and livestock on these sections of public land along the Yampa River would cease. Livestock and related livestock management facilities would be removed or fall into disrepair. People would be able to travel through more of the public lands unrestricted by fences. Roads previously maintained by vehicle use from the livestock industry would disappear. Streambank vegetation would improve and correspondingly, fish habitat would improve. Camping in areas free of cattle, cattle manure and insects would be available along the river. Overall impacts would be beneficial to recreation resources.

Environmental Consequences, Cumulative Impacts: Past, present, and reasonably foreseeable actions that affect recreation in the Little Yampa River SRMA include livestock grazing, some fluid mineral exploration and development, and the infrastructural development necessary to support these two activities, utility and transportation corridors, a power generation plant (Tri-State) and a coal mine (Colowyo). These added developmental impacts would have higher adverse effects on dispersed recreation opportunities, backcountry hunting, hiking, camping and similar activities.

CHAPTER 4– PUBLIC LAND HEALTH STANDARDS

4.1 INTRODUCTION

The Horse Gulch Allotment #04065 has been assessed for compliance with the Colorado Standards of Public Land Health. On May 24, 2007 an interdisciplinary team consisting of four rangeland management specialists, an ecologist and a wildlife biologist completed two

assessments within the allotment. This assessment was part of the Axial Watershed Assessment. Additionally, land health assessments were completed on November 15, 2013 by a rangeland management specialist and a wildlife biologist. These were site specific assessments.

4.2 COLORADO PUBLIC LAND HEALTH STANDARDS

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands.

4.2.1 Standard 1 Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.

Finding of assessments: Land health assessments performed in late 2013 find that all sites observed are currently meeting this standard.

Proposed Action and No Action Alternatives: Upland soil health standards are currently being met under the grazing management plan as outlined in this alternative. Therefore, with no changes proposed, this standard would continue to be met.

No Grazing Alternative: Removing livestock from public lands would generally improve soil conditions within the allotments, but may have unintended, indirect impacts to soil health immediately adjacent to the allotment if additional infrastructure would be built to implement this alternative. This standard would continue to be met under this alternative.

4.2.2 Standard 2 Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods.

Finding of assessments: Within the allotment, all lotic riparian resources of the Yampa River reaches are currently meeting this standard; most lentic resources are not. Significant livestock use is localized at any available surface water source, thereby limiting the overall functionality of the drainage. There is little to no vegetation present at these areas to prevent localized erosion. Where riparian species do exist, health and vigor is low.

Proposed Action and No Action Alternatives: Proposed range improvements (primarily upland water developments and a reduction in number of days livestock are present in pastures with riparian resources) would yield improvements to seeps and springs and the two lentic draws (Horse Gulch and Sand Springs Gulch) present on public lands within the allotment. This expected improvement would move riparian resources towards meeting this standard. This standard would remain unmet if livestock management continues under existing permit conditions (No Action).

No Grazing Alternative: The potential for direct and indirect impacts to riparian areas caused by livestock use, including any potential for sedimentation, is eliminated under this alternative. This alternative has the potential to benefit overall riparian resources the most. This standard would continue to be met.

4.2.3 Standard 3 Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential.

Finding of assessments: Overall, this standard is being met for plant communities within the Horse Gulch Allotment. One site did not meet the expected native species standard in 2007 due primarily to cheatgrass and other annuals. This is not a trend throughout the allotment. Additionally, this increased level was not attributed to the current grazing system. The plant community within the allotment is appropriate and the density and production of key plant species is adequate to provide resilience from human activities.

The allotment provides habitat for a variety of wildlife species. Elk, mule deer and pronghorn utilize this area for winter habitat. Overall, vegetative communities within the allotment are in good condition, providing suitable habitat for terrestrial wildlife species. Shrub cover was adequate to provide winter habitat for browsing species. This standard is met and would continue to be met under all alternatives for the animal communities.

Proposed Action and No Action Alternatives: This standard would continue to be met under both alternatives maintaining healthy, productive, and resilient plant and animal communities.

No Grazing Alternative: Removal of livestock grazing would allow plant and animal communities to continue meeting this standard.

4.2.4 Standard 4 Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Finding of assessments: There are no federally listed threatened, endangered, or BLM sensitive plant species populations identified on these allotments. Potentially suitable habitat could exist for a threatened plant species, Ute ladies'-tresses orchid *(Spiranthes diluvialis)* along the Yampa River. This species was analyzed in the Biological Assessment for the Horse Gulch Grazing Lease Renewal prepared March 2014. A determination of "May Affect, but is not likely to Adversely Affect" was reached. The U.S. Fish and Wildlife Service concurred with this determination on March 10, 2014.

The allotment provides habitat for greater sage-grouse, a BLM sensitive species and a Candidate for listing under the Endangered Species Act. The allotment also provides habitat for two additional BLM sensitive species: bald eagle and Brewer's sparrow.

Proposed Action, No Action and No Grazing Alternatives: This standard is met and would continue to be met under all alternatives.

4.2.5 Standard 5 The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado.

Finding of assessments: As of 2013, the portion of the Yampa River that forms the southern boundary of the allotment is on the CDPHE's Section 303(d) list of Impaired Waters because of high priority total recoverable iron impairment and is on the state's Monitoring and Evaluation List for a suspected water quality problem regarding sediment load.

Proposed Action and No Action Alternatives: Livestock grazing would have no relatable impact to the total recoverable iron impairment. Livestock access from the allotments that are adjacent to the Yampa River could potentially cause a slight increase in sedimentation. Any access livestock have to the river from private lands between the allotments and the Yampa River is outside the permitted actions analyzed here. Permitting livestock grazing in these allotments as proposed would not result in measurable changes to water quality.

No Grazing Alternative: The potential for direct and indirect impacts to downstream water quality caused by livestock use, including any potential for sedimentation, is eliminated under this alternative. This alternative has the potential to benefit overall water quality downstream of the allotment.

SIGNATURE OF PREPARER:

SIGNATURE OF ENVIRONMENTAL REVIEWER:

DATE SIGNED:

Finding of No Significant Impact

Based upon a review of the EA and the supporting documents, I have determined that the proposed action is not a major federal action and will not have a significant effect on the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity, as defined at 40 CFR 1508.27 and do not exceed those effects as described in the Little Snake Resource Management Plan and Record of Decision (2011). Therefore, an environmental impact statement is not required. This finding is based on the context and intensity of the project as described below.

Context:
The project is a site-specific action directly involving BLM administered public lands that do not in and of itself have international, national, regional, or state-wide importance.

Intensity:
The following discussion is organized around the 10 Significance Criteria described at 40 CFR 1508.27. The following have been considered in evaluating intensity for this proposed action:

1. Impacts that may be both beneficial and adverse:
The beneficial effects of the proposed action include: in authorizing public land grazing this action sustains the local economy as grazing operations would continue to supply personal income to the operator and employees, and would have a proportional influence on the regional, Colorado, and national economy. This action supports the western livestock industry. The authorized livestock operator has mandatory and special terms and conditions that must be met to maintain their grazing preference. This provides a certain level of stewardship of public lands in that if these lands were to become degraded by any activity or event, natural or human in origin, grazing and or other authorized uses would be terminated. This stewardship role of the livestock operator not only mandates proper livestock and forage management but also provides communication with the BLM as to other activities or events that could cause degradation to public lands.

2. Degree of effect on public health and safety:
There would be no effect to public health and safety.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas:
There are no park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas in the area of proposed action. As described in the EA, impacts to cultural resources were identified for the proposed action. As this action is not a new action but a continuation of historic land uses in this area there would be no affect to unique characteristics of the geographic area.

4. Degree to which the possible effects on the quality of the human environment are likely to be highly controversial:
Public input regarding the proposed action has been solicited during the planning process. The information about the EA was posted in the NEPA document log on the Internet, at the Colorado BLM LSFO Home Page. Communication with the lessee and partners was extensive during the renewal process and information was taken into consideration.

5. Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risk.
No highly uncertain or unknown risks to the human environment were identified during analysis of the proposed action.

6. Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration:
The proposed action neither establishes a precedent for future BLM actions with significant effects nor represents a decision in principle about a future consideration.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts:
No individually or cumulatively significant impacts were identified for the proposed action. Any adverse impacts identified for the proposed action, in conjunction with any adverse impacts of other past, present, or reasonably foreseeable future actions will result in negligible impacts to natural and cultural resources.

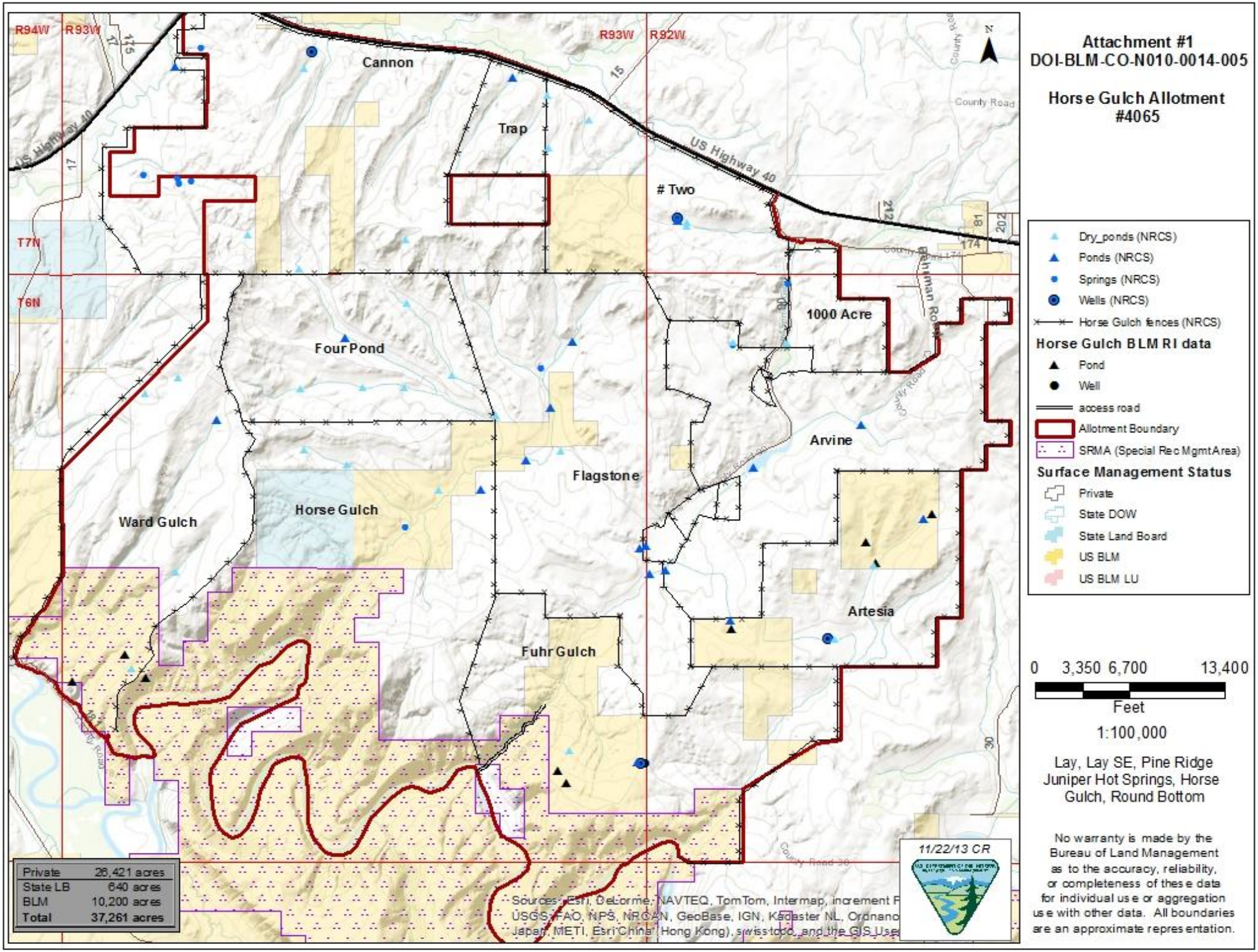
8. Degree to which the action may adversely affect district, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources:
There would be no loss or destruction to these resources.

9. Degree to which the action may adversely affect an endangered or threatened species or its critical habitat:
The Biological Assessment prepared to analyze the effects of the proposed action on threatened and endangered species within the allotment determined that this proposed action "May Affect, Not Likely to Adversely Affect" the Colorado pikeminnow and ute ladies'-tresses orchid. The US Fish and Wildlife Service concurred with this determination.

10. Whether the action threatens a violation of federal, state, or local environmental protection law:
The Proposed Action violates no federal, state, or local environmental protection laws.

SIGNATURE OF AUTHORIZED OFFICIAL: /s/ Timothy J Wilson

DATE SIGNED: 6/24/14


Attachment #1
DOI-BLM-CO-N010-0014-005
Horse Gulch Allotment
#4065
R94W
R93W
R92W
T7N
T6N
Cannon
Trap
Two
1000 Acre
Four Pond
Flagstone
Arvine
Ward Gulch
Horse Gulch
Artesia
Fuhr Gulch
US Highway 40
Dry_ponds (NRCS)
Ponds (NRCS)
Springs (NRCS)
Wells (NRCS)
Horse Gulch fences (NRCS)
Horse Gulch BLM RI data
Pond
Well
access road
Allotment Boundary
SRMA (Special Rec MgmtArea)
Surface Management Status
Private
State DOW
State Land Board
US BLM
US BLM LU
Private 26,421 acres
State LB 640 acres
BLM 10,200 acres
Total 37,261 acres
0 3,350 6,700 13,400
Feet
1:100,000
Lay, Lay SE, Pine Ridge
Juniper Hot Springs, Horse
Gulch, Round Bottom
11/22/13 CR
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregation use with other data. All boundaries are an approximate representation.

ATTACHMENT #2

DOI-BLM-CO-N010-0014-005
TERMS AND CONDITIONS

Standard Terms and Conditions

1) Grazing permit or lease terms and conditions and the fees charged for grazing use are established in accordance with the provisions of the grazing regulations now or hereafter approved by the Secretary of the Interior.

2) They are subject to cancellation, in whole or in part, at any time because of:
   a. Noncompliance by the permittee/lessee with rules and regulations;
   b. Loss of control by the permittee/lessee of all or a part of the property upon which it is based;
   c. A transfer of grazing preference by the permittee/lessee to another party;
   d. A decrease in the lands administered by the Bureau of Land Management within the allotment(s) described;
   e. Repeated willful unauthorized grazing use;
   f. Loss of qualifications to hold a permit or lease.

3) They are subject to the terms and conditions of allotment management plans if such plans have been prepared. Allotment management plans MUST be incorporated in permits and leases when completed.

4) Those holding permits or leases MUST own or control and be responsible for the management of livestock authorized to graze.

5) The authorized officer may require counting and/or additional or special marking or tagging of the livestock authorized to graze.

6) The permittee's/lessee's grazing case file is available for public inspection as required by the Freedom of Information Act.

7) Grazing permits or leases are subject to the nondiscrimination clauses set forth in Executive Order 11246 of September 24, 1964, as amended. A copy of this order may be obtained from the authorized officer.

8) Livestock grazing use that is different from that authorized by a permit or lease MUST be applied for prior to the grazing period and MUST be filed with and approved by the authorized officer before grazing use can be made.

9) Billing notices are issued which specify fees due. Billing notices, when paid, become a part of the grazing permit or lease. Grazing use cannot be authorized during any period of delinquency in the payment of amounts due, including settlement for unauthorized use.

10) Grazing fee payments are due on the date specified on the billing notice and MUST be paid in full within 15 days of the due date, except as otherwise provided in the grazing permit or lease. If payment is not made within that time frame, a late fee (the greater of $25 or 10 percent of the amount owed but not more than $250) will be assessed.

11) No member of, or Delegate to, Congress or Resident Commissioner, after his/her election of appointment, or either before or after he/she has qualified, and during his/her continuance in office, and no officer, agent, or employee of the Department of Interior, other than members of Advisory committees appointed in accordance with the Federal Advisory Committee Act (5 U.S.C. App. 1) and Sections 309 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) shall be admitted to any share or part in a permit or lease, or derive any benefit to arise therefrom; and the provision of Section 3741 Revised Statute (41 U.S.C. 22), 18 U.S.C. Sections 431-433, and 43 CFR Part 7, enter into and form a part of a grazing permit or lease, so far as the same may be applicable.

Common Terms and Conditions

A) Grazing use will not be authorized in excess of the amount of specified grazing use (AUM number) for each allotment. Numbers of livestock annually authorized in the allotment(s) may be more or less than the number listed on the permit/lease within the grazing use periods as long as the amount of specified grazing use is not exceeded.

B) Unless there is a specific term and condition addressing utilization, the intensity of grazing use will ensure that no more than 50% of the key grass species and 40% of the key browse species current years growth, by weight, is utilized at the end of the grazing season for winter allotments and the end of the growing season for allotments used during the growing season. Application of this term needs to recognize recurring livestock management that includes opportunity for regrowth, opportunity for spring growth prior to grazing, or growing season deferment.

C) Failure to maintain range improvements to BLM standards in accordance with signed cooperative agreements and/or range improvement permits may result in the suspension of the annual grazing authorization, cancellation of the cooperative agreement or range improvement permit, and/or the eventual cancellation of this permit/lease.

D) Storing or feeding supplemental forage on public lands other than salt or minerals must have prior approval. Forage to be fed or stored on public lands must be certified noxious weed-free. Salt and/or other mineral supplements shall be placed at least one-quarter mile from water sources or in such a manner as to promote even livestock distribution in the allotment or pasture.

E) Pursuant to 43 CFR 10.4(g), the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further,

pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

The operator is responsible for informing all persons who are associated with the allotment operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any allotment activities or grazing activities, the operator is to immediately stop activities in the immediate vicinity and immediately contact the authorized officer. Within five working days the authorized officer will inform the operator as to:

-whether the materials appear eligible for the National Register of Historic Places;
-the mitigation measures the operator will likely have to undertake before the identified area can be used for grazing activities again.

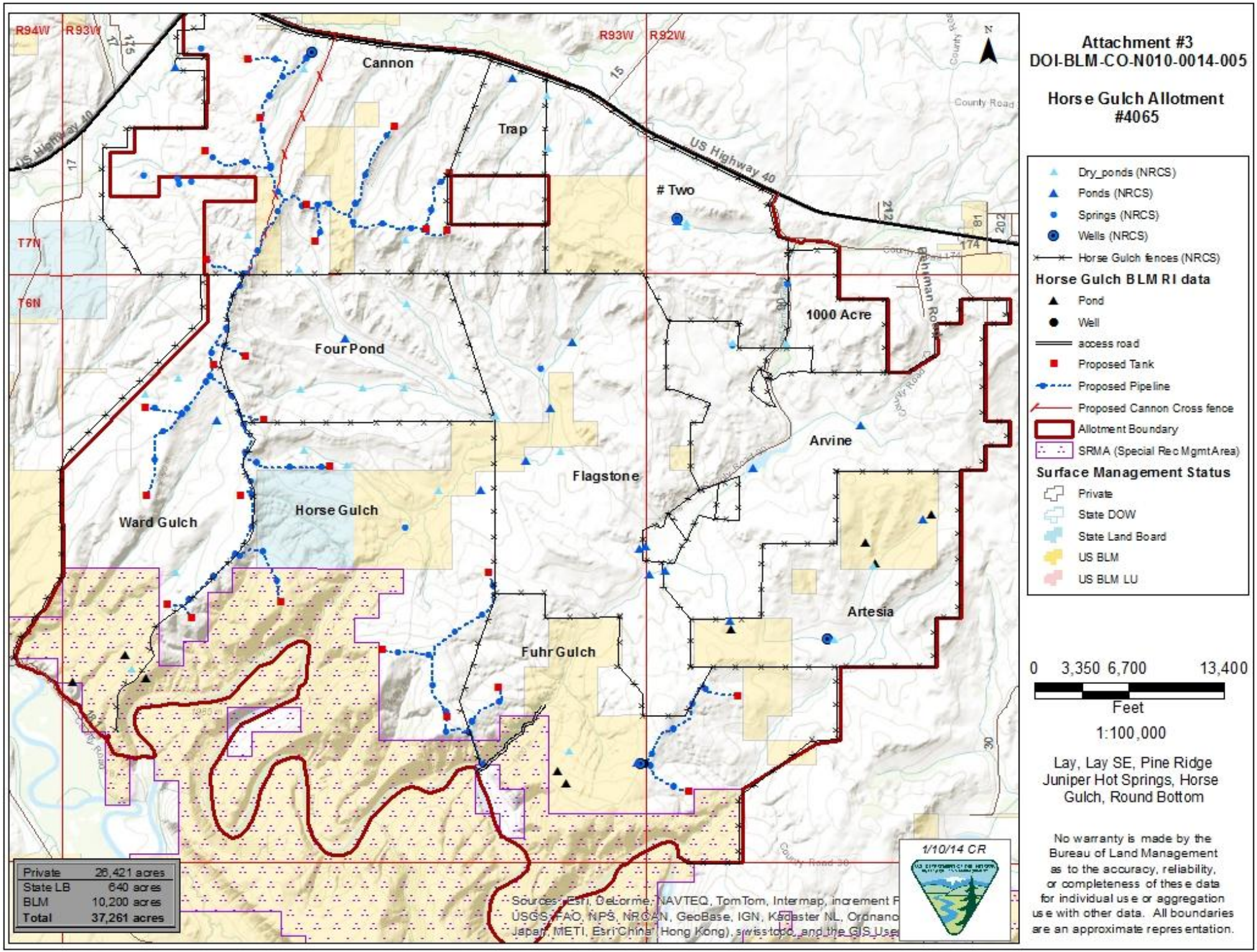
If paleontological materials (fossils) are uncovered during allotment activities, the operator is to immediately stop activities that might further disturb such materials and contact the authorized officer. The operator and the authorized officer will consult and determine the best options for avoiding or mitigating paleontological site damage.

F) No hazardous materials/hazardous or solid waste/trash shall be disposed of on public lands. If a release does occur, it shall immediately be reported to this office at (970) 826-5000.

G) The permittee/lessee shall provide reasonable administrative access across private and leased lands to the BLM and its agents for the orderly management and protection of public lands.

H) Application of a chemical or release of pathogens or insects on public lands must be approved by the authorized officer.

The terms and conditions of this permit/lease may be modified if additional information indicates that revision is necessary to conform with 43 CFR 4180.



Attachment #3
DOI-BLM-CO-N010-0014-005

Horse Gulch Allotment #4065

- Dry_ponds (NRCS)
- Ponds (NRCS)
- Springs (NRCS)
- Wells (NRCS)
- Horse Gulch fences (NRCS)

Horse Gulch BLM RI data

- Pond
- Well
- access road
- Proposed Tank
- Proposed Pipeline
- Proposed Cannon Cross fence
- Allotment Boundary
- SRMA (Special Rec MgmtArea)

Surface Management Status

- Private
- State DOW
- State Land Board
- US BLM
- US BLM LU

0 3,350 6,700 13,400

Feet

1:100,000

Lay, Lay SE, Pine Ridge Juniper Hot Springs, Horse Gulch, Round Bottom